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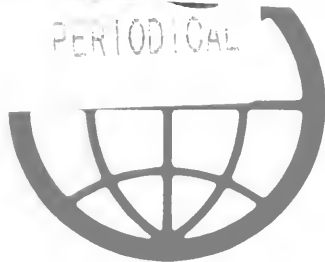
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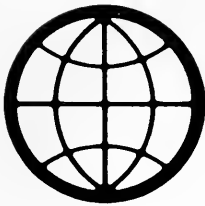
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The Impact of Using Risk Analysis in Capital Budgeting on Earnings Performance: The UK Experience

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Key words: Risk; Risk analysis; Capital budgeting; Capital investment decisions; Earnings performance

Abstract: *Firms using probabilistic risk analysis techniques in capital investment decisions should theoretically outperform firms using simple intuitive risk adjustment methods. However, previous UK and US empirical work examining the effect of adopting sophisticated capital budgeting techniques has produced mixed results, and empirical evidence on the association between changes in risk-handling approaches and corporate performance is virtually non-existent. The current study reports findings from comparing the earnings performance of firms that adopted probabilistic risk analysis versus a control group of firms that employed simple risk adjustment techniques. After controlling for differences in industry effects, size and market risk, results of matched-pair interrupted time-series analyses indicate that firms adopting probabilistic risk analysis experienced no significant changes in relative performance.*

The effective handling of risk is an important, often complex, task in analyzing strategic capital budgeting decisions. Major fluctuations of international exchange rates, increasing rates of global technological change, and less predictability of world competitor behavior have made the uncertainty problems in capital budgeting more acute in recent years. Bierman (1986), in a survey of senior financial officers, reports that the challenges of handling risk considerations was perceived to be the most prominent problem in capital investment decisions among US firms.¹ To consider the impact of introducing sophisticated risk analysis approaches into capital budgeting systems is therefore timely.

The early capital budgeting literature either ignored the impact of risk and uncertainty or dealt with it in a largely intuitive manner.² Subsequently, uncertainty was incorporated into the capital budgeting theoretical framework through the development of approaches including ad hoc rule-of-thumb risk adjustments, mean-variance

analysis,³ and a methodology for pricing risky assets.^{4,5} In particular, the capital asset pricing model (CAPM) was developed with financial investments in mind, and for a quarter of a century the academic community has wrestled with the task of extending and applying the framework to capital investment – as yet, with only limited success. There has been an increasing recognition that, in a less perfect market where few investors are well diversified, capital assets are not and should not be priced in terms of non-diversifiable risk alone. A recent survey also indicates less than 10 percent of larger firms in the United Kingdom use CAPM in capital budgeting decisions.⁶

In practice, risk-handling methods fall broadly into two major categories: simple risk adjustment (SRA) and probabilistic risk analysis (PRA).⁶ PRA techniques emphasize a comprehensive awareness of the uncertainties associated with critical project variables, and usually involve evaluation of the associated expected-values and variance of a project's outcomes before any risk-return trade-off decision is made. Commonly employed PRA techniques for strategic, large-scale projects include sensitivity analysis, decision-tree-type probability analysis, and Monte Carlo simulation. These methods are in contrast to the SRA methods which are mainly based on deterministic estimation and intuitive adjustments to the discounted cash flows (DCF) evaluation model.

This study focuses on testing whether one should expect the firm performance to improve with the adoption of the PRA in the firm's existing capital budgeting process. Theoretically, firms employing PRA in capital budgeting should perform better than firms using only SRA methods such as reducing payback period or raising discount rates intuitively. Many authors noted that these SRA techniques, despite their apparent ease of understanding and use, contain assumptions which may not be easily understood by many managers and could lead decision makers to accept decisions against their original intentions.⁷⁻⁹

In contrast, PRA requires rigorous analysis and provides more information about the risk inherent in a project. Some authors further assert that the greater the understanding of the precise nature and level of the risk the better the decision outcomes and, ultimately, enhanced corporate performance.^{10,11} The supporting reasoning behind this is that firms adopting these techniques should, in theory, reduce uncertainty surrounding estimates and forecasting errors. In addition, by quantifying risk and systematically examining the possible outcomes of alternative decisions, firms using PRA can more effectively identify the "killing" factors and major threats which could cause a sharp decline in earnings.

While a number of American writers lend much support to the PRA approach, and others present successful case examples attributing, in part, project success to risk analysis,¹²⁻¹⁶ previous capital budgeting surveys, conducted both in the United States and the UK, indicate that the transition from theory to practice has been slow.^{6,17,18} Besides some implementation and practical problems of PRA,¹⁹ one explanation for the relatively low PRA usage rates is that disagreements exist in both the literature and business community as to its real "bottom-line" impact, if any. Some managers hesitate to use risk analysis partly because there has been no proof that the use of recommended risk analysis procedures will affect a firm's performance.²⁰ Academics should not take lightly such opinions regarding risk

analysis. Managers cannot be expected to employ risk analysis just because it is “state-of-the-art”, if the techniques are not actually cost-effective.

The general support for PRA in the theoretical literature is not consistent with the practice of the majority of firms and this, together with the lack of agreement on its financial impact, presents a relevant and important subject for further investigation. The basic research problem of this study is: does the adoption of PRA lead to an increase in a firm's performance?

The limited empirical research findings investigating the impact of capital budgeting sophistication (CBS) on firm performance have been mixed and inconclusive,^{21–26} although none specifically considered the risk aspect. Except Haka et al. (1985), all these studies failed to control extraneous variables that could have influenced performance.²⁶ Recognizing this potential weakness and in view of the fact that there has been no specific study on the impact of risk analysis adoption, Ho and Pike (1990) used an interrupted time series experimental design to examine the effect of “risk analysis” adoption on level of capital expenditures in larger UK firms.²⁷ The major objective of the present research is to develop a similar experimental design to test rigorously the PRA effects on firms' earnings performance over time. The findings might help us discover more of the value of risk analysis in capital budgeting contexts.

The null and alternative hypotheses of interest can be formally stated as follows:

H_0 : A firm's earnings performance following the adoption of probabilistic risk analysis will not be significantly higher than its earnings performance prior to adoption.

H_1 : A firm's earnings performance following the adoption of probabilistic risk analysis will be significantly higher than its earnings performance prior to adoption.

Experimental Design and Data Collection

Experimental design and data collection were conducted by matching a firm which adopted PRA (i.e., an experimental firm) with one that did not (i.e., a control firm) over the same time period. For purposes of this study, PRA users refer to those who formally and systematically determine the probabilistic distribution and its derived statistics of a project's performance by using decision-tree-type probability analysis. A comparison of the relative performance (experimental firm measure minus control firm measure) before and after the experimental firm adopted PRA can then be made, using an interrupted time-series model. It is well understood that the changes to PRA are neither unilateral nor mutually exclusive. In fact many organizations that made the switch continued to use, or felt that they should supplement their PRA, with the simpler methods. Therefore, the current study is to compare SRA with SRA plus PRA.

While this two-group pre- and post-test (ex post) quasi-experimental design is not a true experimental design (due to the absence of random assignment and therefore potential self-selection bias), it eliminates the effects of many of the factors that pose a threat to internal validity, such as history, maturation, testing, instrumentation, and mortality bias.^{28,29} The details of the matching process and the interrupted time

series model used for data analysis in the current study will be presented in later sections.

To obtain groups of firms for PRA adopters and non-adopters, this study used both mailed questionnaires and interviews. The questionnaire approach ensured that a large sample size, representing different industries and geographical areas in the UK, could be included in the study. As part of a large-scale survey in risk-handling practice, the scope of the questionnaire covered the respondents' perceptions of risk, general approaches to risk evaluation, scope of risk analysis, risk adjustment and reduction methods used, the nature of projects to which risk analysis was applied, problems encountered, and perceived impacts of using risk analysis. To minimize potential difficulties and problems, the draft questionnaire was subjected to an in-depth review by four academics and was pilot tested on six financial executives (not included in the final sample) in July 1987.

For the present study the research questionnaire was used (1) to identify firms that were or were not engaged in PRA; and (2) to determine when the user firms initiated risk analysis. Respondents' companies were initially classified as PRA non-users if they (on a six-point Likert scale) "never" used decision-tree-type probability analysis, while companies that "often" or "very often" used the technique were classified as users.³⁰ Basic probability analysis, which requires probabilistic estimates of cash flows and associated mean-variability calculations, was chosen because it is the basis of all more sophisticated techniques such as risk simulation and CAPM.

Prior studies suggest that adoption of sophisticated capital investment methods is associated with firm size.²² It is important and most promising, therefore, to conduct this research within these companies which have major capital expenditure programs. Questionnaires were therefore sent to named finance directors of the largest 350 UK firms listed in *The Times 1000* during the summer of 1987. After two follow-ups, a total of 146 responses were received with a usable response rate of over 42 percent. Detailed financial measures were obtained for each sample firm from secondary sources. These include DATASTREAM and EXSTAT databases, London Business School's *Risk Measurement Service* and *The London Share Price Database*.

Measuring Earnings Performance

Ideally, the use of any capital budgeting technique should be evaluated on a cost-benefit basis. An indicator of PRA effectiveness would be the marginal benefits for the change divided by the marginal cost incurred for the change. In theory a firm should continue to make changes until the marginal benefits produced equal the marginal costs. The further the firm goes from this optimum point, the less cost-effective the system. Unfortunately, there exists no operational method for implementing these measures. This approach requires the knowledge of the potential earnings power of all fixed assets. Thus, one always has to settle for less ideal but more practical methods using aggregate performance measures.

Corporate earnings performance can be measured using stock market or accounting data. From a modern financial theory perspective (perhaps not accepted by many

managers), capital budgeting is designed "to make decisions that will maximize the value of a firm's common stock".^{31,32} If maximizing shareholders' wealth (MSW) is the normative goal of capital budgeting, it might seem preferable to isolate the impact of capital budgeting practices on market returns and systematic risk.^{33,34} However, performance measures based on stock price or market returns are rarely used in capital budgeting and strategic planning studies for various reasons.

Two American studies using market returns were conducted by Kudla (1980) and Haka et al. (1985).^{26,35} With the use of a time series experimental design, Kudla (1980) was unable to find significant differences in the beta and abnormal returns earned by shareholders of "planning firms" and "non-planning" firms.³⁵ Haka et al. (1985) also found no shift in beta values and market after firms had adopted discounted-cash-flows (DCF) techniques.²⁶ One possible explanation of these results is that investors are likely to know very little of the capital budgeting practices used by firms. Such information may only be leaked into the market over a long time period in fragmented form, and it is difficult to isolate effects of such knowledge if they do have it. Kudla (1983) also indicated that the market model may not be an accurate description of the process generating security returns. Clearly, the use of the market model is mainly based on, among others, the MSW and efficient markets assumptions. Although there is some empirical evidence that support these assumptions to a degree, they still require further investigation. In fact, one may argue that operating performance of a firm is more directly influenced by capital budgeting results than is stock market performance.

Despite these, this study initially planned to use both accounting returns and market returns in order to obtain complementary results. However, only performance measures based on internal operating profits were actually used due to the unavailability of historical market data (particularly before 1973) for many sample firms in the experimental model. LBS's *Risk Management Service* began in 1979, and historical share prices from LBS's *London Share Price Database* were also not complete for many of the sample firms. The data availability problem makes the analysis of firm performance using market data on a time series basis very difficult, if not impossible.

Performance measures involving only operating returns in this study can still be justified for several other reasons. For instance, Friend (1977) reports in the results of a survey of 1000 American investors that most individual investors do not have highly diversified portfolios.³⁶ Consistent with this is the fact that 45 percent of the investors reported using earnings volatility to assess risk, 30 percent reported using price volatility, whereas only 17 percent reported using published betas. This suggests that most investors do not evaluate, explicitly or implicitly, security risk in terms of its covariance with the market. Pike (1982) reported that managers in the United Kingdom place much higher importance on return on capital and profit growth than on shareholders' goals. Many authors suggest that "unsystematic" variation is not viewed as irrelevant even though theory suggests it can be eliminated by diversification.

In this study, for the theoretical and practical reasons discussed above, average operating performance measures (adjusted for systematic growth patterns) was selected as a surrogate of firm performance. Of course, the operating performance of a company has many dimensions (e.g., sales, operating return, net incomes). Among the different

but usually highly correlated accounting performance measures (e.g., sales, operating revenues, operating incomes, net incomes, earnings per share, operating return on assets, operating return on equity), operating rate of return (ROR) type of measures is probably the most commonly used in previous capital budgeting studies.^{22,23,25} Although ROR is not generally a good evaluation method in capital budgeting, some authors have advocated its retention together with DCF techniques.³⁷ ROR is also viewed by many managers, investors, and creditors as a measure of efficiency in the use of capital resources in the operation of a business. Furthermore, although ROR is based on the total operations of the firm rather than on incremental activities, it is still appropriate for the present experimental study by using several means of control such as matched-pairs design, annual percentage growth measures, and five-year periods of measurement. These measures, while perhaps a crude substitute for the incremental returns, are nevertheless seen as sufficiently adequate measures for the present research.

To gain better insights into the findings and ensure reliability, three different measures of operating return measures were used: absolute operating profits (OP), operating profits divided by total assets (OP/TA), and operating profits divided by sales (OP/S). These returns measures tend to provide a better description of the effectiveness of capital investment than does return on equity because it is not sensitive to differences in financial leverage employed by different companies. In all cases, operating profit is defined as profit before tax, interest, and non-recurring items. This definition likewise helps eliminate variations primarily caused by different accounting procedures or unusual events and not by real differences.

The mean earnings performance in each sample firm is measured by the average annual growth rate of the operating return, before and after the adoption year. This minimizes short-run fluctuations and reduces the possibility of unusual circumstances dominating the performance measure. Operating returns data for the 11 years surrounding the adoption of risk analysis (five years before, the year of adoption, and five years after) were collected. Annual operating return figures were obtained mainly from the DATASTREAM database (Program 190X), supplemented by the EXSTAT database.

Development of Matched-Pairs

To qualify as "experimental", a user firm must adopt PRA between 1975 and 1981 inclusive. This was done because the time series model aims to compare five-year relative earnings performance (experimental minus control) prior to the PRA adoption year with the five-year measure after adoption. Earnings performance is assessed over a fairly lengthy period of time because the impact of PRA may be realized at different rates in different firms. The choice of a pre- and post-adoption period of five years was based on a trade-off between allowing enough time to filter the effect and maintain acceptable sample sizes. In addition, since the performance data were not available before 1970 and after 1986 for most sample firms, it was necessary to accept only experimental firms which adopted PRA between 1975 and 1982 in the data analysis.

Table 1. Number of Firms Adopting Probabilistic Risk Analysis by Year

	Number	Percentage
Initiated PRA before 1975	1	4
Initiated PRA in:		
1975	1	4
1976	2	8
1977	5	20
1978	4	16
1979	3	12
1980	5	20
1981	5	20
Initiated PRA after 1981	3	12
Total	29	100

For each firm passing the adoption year criterion there must be a matching control firm which has not used PRA but has similar investment environments and opportunities relative to its experimental firm. Previous research has indicated that industry, size, and uncertainty tend to influence capital budgeting practices and effectiveness.^{23,25,26} The criteria for the control firm therefore included: (1) at least the same first two-digit Standard Industrial Code (SIC) as the experimental firm; (2) similar size of net fixed assets (in the year prior to PRA adoption by the experimental firm); and (3) a similar market risk (beta) measure in the year prior to adoption.³⁸

The findings of the current study indicate that SRA and PRA are used by 83 percent and 30 percent of sample firms respectively, which confirmed the results of earlier studies.^{17,18} Based on preliminary analysis from the survey responses, 35 firms having adopted and consistently used PRA between 1975 and 1981 were initially selected as experimental firms.³⁹ Similarly, 83 non-adopting companies were identified and classified as non-users. Two firms in the experimental group and seven firms in the control group were excluded from subsequent data analysis because annual performance data were not available for the test period. The final sample was selected from these 33 user firms which initiated PRA between 1975 and 1981, and from 76 non-user firms (see Table 1).

To obtain a control firm for each experimental firm, all non-user firms with the same two-digit SIC as the user firm were selected as potentially matching firms. Secondly, a preliminary match was formed if the fixed asset size ratio for the two firms (dividing the experimental firm's asset size by the control firm's asset size)

Table 2. Final Sample of PRA Users and Non-Users

	Number of users	Number of non-users
Total number of firms	45	83
Less:		
users not adopted PRA between 1975-81	4	-
users unable to specify adoption year	6	-
firms with missing performance data	2	7
firms with no matching firms	8	51
Total	25	25

Table 3. SIC, Asset Size and Beta for Matching Firms

Matched pair number	Year of adoption	2-digit SIC	Asset ratio in year prior to adoption	Beta ratio
1	1980	43	2.59	0.869
2	1981	42	0.18	0.674
3	1976	61	1.10	1.135
4	1981	32	0.26	1.020
5	1976	25	0.57	1.074
6	1977	34	0.23	1.351
7	1978	31	1.26	0.621
8	1981	48	2.51	1.221
9	1979	36	3.15	0.790
10	1980	65	2.22	1.012
11	1979	64	0.86	1.072
12	1977	13	1.49	0.780
13	1981	50	1.50	1.095
14	1978	45	5.11	1.057
15	1977	25	0.59	1.148
16	1980	77	6.39	1.044
17	1980	34	0.71	1.450
18	1978	42	2.75	0.953
19	1975	25	1.30	0.745
20	1981	48	0.69	1.076
21	1977	31	0.45	0.825
22	1979	24	3.95	1.038
23	1980	61	0.25	1.283
24	1978	32	0.79	1.100
25	1977	34	0.60	0.955
Mean asset ratio	= 1.58			
Standard deviation	= 1.61			
Mean beta ratio	= 1.015			
Standard deviation	= 0.203			

was between 0.20 and 5.00. A similar size criterion was used in several previous studies.^{26,40} If more than one non-PRA firm satisfied the two criteria, the firm with the closest beta ratio was chosen as the matching firm. As a result, a reasonable match could not be obtained for eight of the remaining experimental firms. This matching process reduced the final sample size to 25 pairs as shown in Table 2.

Telephone interviews were conducted with senior financial executives of the 25 experimental firms to verify the adoption year and the nature of usage during the test period. Some of them also provided their capital budgeting manuals and risk analysis forms/outputs. Over 85 percent of the experimental firms employed PRA techniques for evaluating more than half of their total capital budget. Although it would be desirable for the sample size to be larger, it is a sufficient size for the non-parametric techniques chosen to test the data.⁴¹

Quality of Matching

Table 3 provides an indication of the quality of the matches by SIC, asset size and beta, the three major criteria deemed necessary for a good match. The results reveal that all matched pairs have the same two-digit SIC code. The majority of the pairs

Table 4. Group Comparison on Selected Attributes

Characteristics	Mean difference ^a	Median difference ^a	Wilcoxon Z ^b
<i>In year prior to adoption</i>			
Fixed assets	10 m	21 m	-0.1067
Sales	507 m	-7 m	-0.3007
Return on capital employed	3.41	6.06	-2.4843
Gearing	1.08	1.05	-0.1567
Beta	0.0068	0.0057	-1.3412
<i>Average (1982-86) measures</i>			
Average fixed assets	141 m	85 m	-0.4366
Average sales	-527 m	228 m	-0.2619
Average ROCE	-3.51	5.22	-2.9589
Average gearing	1.16	1.04	-0.0776
Beta (Dec. 1987)	0.05	0.07	-1.4434

^aControl firm measure minus experimental firm measure.

^bExcept average ROCE, none of the differences was statistically significant at the 0.05 level. A two-sample *t*-test gives similar results.

had an asset ratio between 0.30 and 3.00. Only three asset ratios (0.18, 5.11 and 6.39) in the year prior to adoption slightly exceeded the original criteria (0.2 to 5.0). This problem, however, did not appear when the 1986 asset ratio was computed. Furthermore, any minor individual matching disparities should be offset when the firms are considered as a portfolio of experimental and control firms. As a result, even though the asset size criteria for the control group were relaxed slightly in a few cases, with an overall average of 1.58, the samples were well matched on size.

Regarding beta measures, there again appears to be a good match. The average betas were 0.9272 for the experimental group and 0.9204 for the control group. The difference between the portfolios' average betas is small, 0.0068, indicating the sample was well matched on systematic risk.

A further comparative analysis of the experimental and control firms on selected attributes is presented in Table 4. The two groups are not statistically different in terms of net fixed assets, sales, gearing (leverage) and firm beta. This information further suggests no major differences between the two groups in most aggregate attributes. Overall, the pairs of firms (adopter vs. non-adopter) were well matched.

Finally, the distribution of the matched-pairs analyzed by industry groups and asset size groups indicates no significant bias in the sample firms as a representative sample of the largest 350 of *The Times 1000* firms. For the purpose of this study, the final sample was representative and quite acceptable.

The Analytical Model

To test for a relative shift in corporate investment, an interrupted time series design was constructed. The performance measures are denoted as *P* and the adoption year of each experimental firm a *t* (see Table 2 for the distribution over adoption year). For the purpose of comparison, a hypothetical adoption year *t* was assigned for each control firm which was the same as the actual year for the matched user firm, so that

the same time period could be studied. Since only the year of adoption was known, it was assumed that all user firms adopted PRA in the month of June. From interviews with executives, firms usually take six months to one year to implement PRA. Therefore, the effect of PRA will begin in $t+1$ and be reflected (if at all) in the financial statements in the fiscal year ended $t+1$. This implies a time lag of one year on average from the time of adoption until the effects begin to be realized.

A matched-pairs test of mean differences can be used to indicate whether performance measures of experimental firms changed after adopting PRA, relative to control firms over the same period. There are several alternative approaches to test for such a shift in performance measures, but the approach employing a "relative measure" was deemed more appropriate and powerful for the present study. The relative earnings performance for each firm, R , was created for each pair of companies by subtracting the average annual percentage change in earnings performance of each control firm from the matched experimental firm, both before and after the adoption of PRA. These are as follows:

$$R_{bk} = P_{bk}^e - P_{bk}^c \quad (1)$$

$$R_{ak} = P_{ak}^e - P_{ak}^c \quad (2)$$

where: P = average growth rates of earnings performance

R = relative earnings performance

e = experimental firm

c = control firm

b = before adoption period

a = after adoption period

k = matched pair number

The relative measure was computed for each matched pair. The result was one sample of 25 relative performance measures before adoption, and one sample for the period following adoption. To test for significant change in the relative performance as a result of PRA adoption, the following statistical hypotheses are constructed:

$$H_0: R'_a - R'_b \leq 0$$

$$H_1: R'_a - R'_b > 0$$

where R'_b is the mean of R_{bk} and R'_a is the mean of R_{ak} , for $\alpha = 0.05$.

The hypotheses could be examined using either the paired t -test for differences in mean, which assumes normality, or the corresponding non-parametric Wilcoxon matched-pairs signed-ranks test (hereafter Wilcoxon), which requires only a random sample of data. A "paired" test was more appropriate than a "two-independent sample" test because the same pairs were in the sample both before and after PRA adoption, which constitute matched observations. The paired t -test is the preferred method when the sample size is large, or when the data are normally distributed. However, the small sample size (25 pairs) in this model indicated the possibility of non-normality of the population, and this rendered the validity of the t -test questionable.⁴² In order to offset the concern for the potential non-validity of the t -test, the Wilcoxon test was also conducted in subsequent analyses.

Table 5. Test of Shift in Relative Firm Returns

	OP/TA	OP	OP/S
<i>Paired samples test</i>			
Wilcoxon Z-statistic	-1.3453	-0.8143	-0.7399
p-value (one-tail)	0.0892	0.2077	0.2298
Mean differences ^a	0.1812	-0.0880	-0.1024
s.d. of differences	0.638	1.114	1.081
Matched t-statistic	1.42	-0.39	-0.47
p-value (one-tail)	0.084	0.348	0.320

^aThe differences are calculated by subtracting the relative performance before adoption from the relative performance after the adoption.

Hypothesis Testing Results

Table 5 summarizes the results of the statistical analysis for each of the three alternative measures of P_i . While OP/TA has a negative relationship with PRA adoption (p -value = 0.08), all other mean earnings measures show positive association (most p -values > 0.20). Since statistical tests of different measures of means of annual growth in operating returns (OP, OP/TA, and OP/S) for the 25 matched-pairs all indicate a non-significant (α = 0.05) difference between pre-adoption firm risk and post-adoption firm risk, the null hypothesis cannot be rejected. These findings indicate that there is no significant effect of PRA adoption on relative operating returns of adopting firms.

Summary Discussion

A central aspect of any sophisticated capital budgeting system is the assessment of risk. However, there has been virtually no empirical examination of the specific association between risk-handling approaches and investment effectiveness. The current study has investigated the association between PRA adoption and changes in firm performance using a more rigorous research methodology.

While the intention of this procedure is to get as close a match to the experimental firm as possible, the results are not always as ideal as is hoped for and the findings may be biased by less than perfectly comparable matches. In addition, since the entire procedure for selecting both experimental and comparison firms is nonrandom, inference of the results of this research in the population of firms using risk analysis techniques must be made with caution. Despite these potential limitations of the experimental design, the results present a quite discernible pattern. Overall, the results indicate that, relative to control firms, firms adopting PRA experienced no significant changes in firm performance. One interpretation of the findings is that, from a decision analysis perspective, it may be true that the impact of risk analysis is more on the decision process rather than on firm outcomes.¹⁶ To confirm this survey respondents were asked to assess the perceived impact of risk analysis as summarized in Table 6. Examination of means revealed general agreement that PRA provides useful insights into the project (mean = 4.57), increases decision

Table 6. Perceived Impacts of Risk Analysis

Formal risk analysis:	Strongly disagree					Strongly agree	Mean
	1 %	2	3	4	5	6	
1. Provides a useful insight into the project.	0.7	2.8	10.6	29.1	38.3	18.4	4.57
2. Increases confidence in investment decisions.	0.0	2.1	13.6	34.3	39.3	10.7	4.30
3. Improves efficiency of investment decisions.	0.7	3.6	23.2	38.4	23.2	10.9	4.12
4. Enhances communication among managers.	2.9	16.5	33.1	29.5	14.4	3.6	3.47
5. Improves ultimate project performance.	5.8	17.5	29.2	30.7	11.7	5.1	3.40

confidence (mean = 4.30), and improve decision process efficiency (mean = 4.12). However, the results also show that many users are ambivalent to whether risk analysis can improve ultimate project performance (mean = 3.4). Overall, the survey findings show that the perceived impact of risk analysis on the investment *decision process* has been substantial, but its impact on the *decision outcomes* is less conclusive. This, in fact, supports Carter's (1972) observation that "perhaps the greater benefits of risk analysis come from the preparation of the model, not from the results" (Ref. 43, p.78).

Nevertheless, the survey findings also suggest that the financial impact of PRA adoption are not the same for all user firms and may be subjected to influences of other organizational variables. This supports the previous work that the mere adoption of sophisticated capital budgeting techniques itself may not guarantee the desired effects.^{44,45} Further research which the author believes to be worthy of further investigations is to question organizations that switched to the PRA approach to learn why they changed. The motive of further testing is to discover firm-specific characteristics which make it possible for companies to use or experience more of the benefits of risk analysis. If significant organizational factors do exist, it would imply that firms need to re-design these factors before they can use risk analysis beneficially.

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A Note of Caution to Users of Japanese Financial Reports: A Demonstration of an Enlarged Exogenist Approach

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Key words: Exogenism; Financial; Global; International; Japan; Socio-economic

Abstract: *This study focuses on the process of financial reporting in Japan and raises a fundamental question: why do the Japanese practice financial reporting? Our enlarged exogenist investigation of the Japanese financial reporting process indicates a major inconsistency. The stated objective and the Japanese socio-economic infrastructure appear to be incongruent. In sum, Japanese corporate financial reports may lack significance as communication devices, since important financial information is exchanged within a traditional system of formal and informal structures.*

Introduction

An increasingly interdependent global economy has opened up a new frontier entitled worldwide financial markets. Yet, heavy demands may be implicitly placed on the users of corporate financial reports to impute “nationalistic practices” so as to make international financing decisions.

This study focuses on the process of financial reporting in Japan and raises a fundamental question: why do the Japanese practice financial reporting? Our enlarged exogenist investigation of the Japanese financial reporting process indicates a major inconsistency. The stated objective and the Japanese socio-economic infrastructure appear to be incongruent.

Our investigation of the Japanese financial reporting process provides a description that does not support the stated objective of financial reporting in Japan. This objective

is identical to that advanced by the US Financial Accounting Standards Board's Statement of Financial Accounting Concepts Number 1:

Financial reporting should provide information that is *useful* to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions.

In contrast, the interactions of neighboring social systems (i.e., capital funding and corporate systems) and the surrounding socio-economic environment do not appear to support (and may even undermine) the stated objective of financial reporting in Japan. A fusion of power relationship (among elite bankers, major corporate and government bureaucrats) promotes information asymmetries through formal and informal access to financial information, and thereby subverts any strong demand for published financial reporting. Meanwhile, the actual users of financial reports (non-related institutional investors) are relegated to a secondary status. This scenario raises questions as to the effectiveness of corporate financial reporting as a useful form of (substantive) communication in Japan.

Enlarged Exogenism

Enlarged (modified) exogenism is an exploratory sociological method developed by Smith (1973, 1976) and applied to accounting by McKinnon (1986). Modified exogenism is a synthesis of endogenist and exogenist research perspectives. Endogenism focuses on internal elements of a subject. Exogenism emphasizes external aspects of a subject. This enlarged perspective recognizes a phenomenon under investigation, its neighboring phenomena, its environmental setting, and a potential for intrusive events. The first three factors should be viewed as an interactive relationship where each factor may influence the other. The fourth factor (an intrusive event) is an unusual and infrequent occurrence that significantly impacts the subject. The subject (according to Smith's blueprint) is a social system. This study assumes that the process of financial reporting is a social system.

Highlights of the Japanese Financial Reporting Process

Fig. 1 illustrates the Japanese financial reporting process's internal elements (authorities), its neighboring social systems (capital funds and corporate sectors), and its socio-economic environment in accordance with an enlarged exogenist approach. Furthermore, although not depicted in the diagram, two intrusive events have been instrumental in the development of financial reporting in Japan.

Authorities of Financial Reporting

The Japanese financial reporting process includes regulators, facilitators, preparers, and users of financial reports. The government bureaucracy, particularly the Ministry of Finance (MOF), dominates the regulatory process. Facilitators refer to certified public accountants who must belong to the Japanese Institute of Certified Public

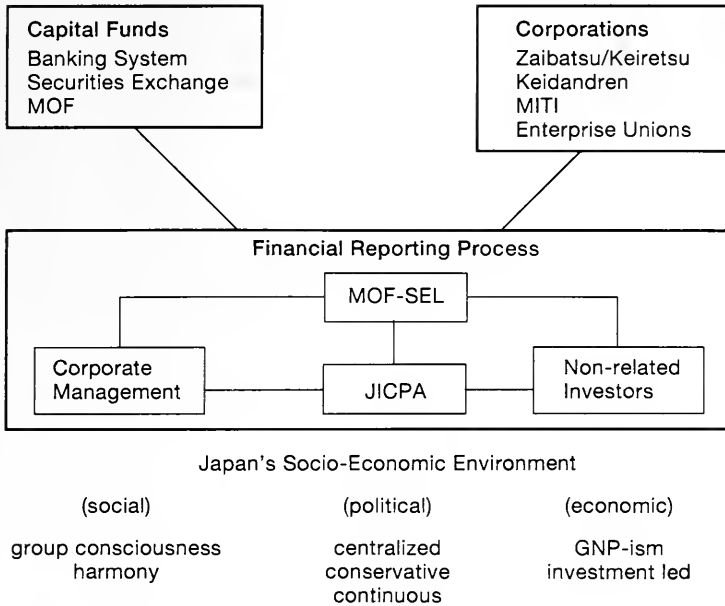


Fig. 1. An Illustration of Japanese Financial Reporting: The Process, Neighboring Systems and Environment

Accountants (JICPA). The preparers are corporate management, while institutional investors (interested in dividends and capital gains) are the dominant user group.

Regulators

A tripartite of laws, all legislated by the government bureaucracy, regulate financial accounting in Japan. This tripartite includes the Securities and Exchange Law (SEL), the Commercial Code, and the Corporate Income Tax Law, with regulations related to each law. The MOF administers both the SEL and taxation areas, while the Ministry of Justice (MOJ) oversees the Commercial Code.

Facilitators

Legislative action and delegation of responsibilities by the MOF create an institutionalized public accounting profession in Japan. Japan's public accounting profession is relatively small, with 9000 CPAs and another 2100 Junior CPAs working in approximately 115 audit corporations (as of July 31, 1991). Approximately 70 percent of the CPAs conduct audits. Only 10 audit firms employ more than 50 CPAs, while the total number employed by all 10 firms is more than 4000 CPAs. In sum, the MOF through legislative action introduced and nurtured a (small) public accounting profession in Japan. The profession and JICPA are synonymous.

Preparers

Corporate management is responsible for financial reporting. Management must prepare an annual financial report to meet its legal obligation. The Ministry of

Finance (MOF), particularly the Securities and Exchange Law (SEL), requires annual corporate financial reports: financial reports that should provide useful information to present and potential investors and creditors – a precarious objective given the preparers' attitude toward speculative investors.

Management appears to be indifferent toward stockholders who seek short-term profits through generous dividends and immediate capital gains. Investors who seek short-term profits are perceived by management to be non-essential outsiders. Furthermore, since management compensation benefits are not dependent upon reported short-term profits, managers are more inclined to pursue long-range objectives. Japanese managers often develop a relatively long-term orientation that emphasizes increasing market share and productive efficiency.

Management practices include advocating secrecy, while providing formal and informal access to information for important corporate group members and its in-house labor union. Much information sharing takes place within a corporation and across its corporate group members; but, little or none is shared with outsiders without external pressure, e.g. the SEL legislative reporting regulations. Japanese managers and the MOF have a high regard for maintaining a competitive advantage rather than for competition per se. This scenario precludes equal access of information sharing and promotes secrecy.

In sum, corporate managers' attitudes and practices focus on long run goals and selective sharing of information: strategies that may not be congruent with short-term SEL (annual) reporting of profits

Users

The primary users of SEL financial statements are relatively sophisticated securities analysts working for non-related institutional investors and securities corporations. But only 40 percent of all institutional investors subscribe to a *zaitek* activity. *Zaitek* means to maximize dividend income and capital gains through (speculative) security trading to improve earnings. These users are insignificant with respect to capital formation within corporations and the future survival of corporations.

Neighboring Social Systems

The process of financial reporting in Japan interacts with many social systems involving varying degrees of influence. Two of these social systems (the capital funds and corporate sectors) frequently interact with the Japanese financial accounting process.

Capital Funds

An established banking system, a rapidly growing securities exchange, and an active MOF are the primary authoritative participants in generating new capital. The MOF directly regulates the banks and the stock exchange through its banking bureau and securities bureau.

The Japanese banking system has traditionally supplied the corporate sector with vital amounts of capital funds (at relatively low interest rates) for productive invest-

ments. This tradition is evident through the majority of contemporary corporations that continue to rely heavily upon (bank) debt financing. Twelve city banks provide approximately 60 percent of the credit for the country's largest corporations, often in the form of short-term promissory notes that are continually rolled over. These short-term loans enhance an existing (bank) debt dependency by corporations.

Cross-shareholding (between the city banks and major corporations) causes banks to assume a dual role of creditor and owner, while corporations reciprocate by owning its bank's common stock. This practice promotes a mutual bonding that enhances loyalty. The banks also maintain close client relations through interlocking directorates. Staff members of the banks are placed on borrowing corporations' boards of directors to cement relationships with the corporate sector.

In addition, three long-term credit banks provide long-term financing that carry a "de facto guarantee" by the government. Long-term loans are generally interpreted as evidence of governmental favor. They are considered to be a corporate life insurance policy regardless of loan size. The long-term credit banks maintain a close relationship with government through financing, hiring, and advisory practices.

A summary of the banking structure shows that the Central Bank of Japan controls the major city banks by adjusting and influencing the amount and distribution of funds, and by guaranteeing the banks against financial failure. Insulated against failure, the major city banks have become the primary capital source for large corporations. Meanwhile, the three long-term credit banks maintain a very close relationship with the government bureaucracy and are an attractive source of capital funds. The major Japanese banks (both city and long term), large corporate groups, and the government bureaucracy promote cooperative financing efforts that enhance a mutual interdependency.

The Japanese security market's overall characteristics may be misleading, particularly with respect to influencing the corporate sector. Despite the market's magnitude and impressive list of constituents, the market has never supplied more than a token amount of funds to corporations.

Corporate Sector

Corporate elitism in Japan is reinforced by a group consciousness at the corporate level and a "Japan Incorporated" phenomenon, i.e. the close relationship between government and industry. The corporate groupings can be traced back to the late nineteenth century *Zaibatsu* (financial cliques) and continue through the present day *Keiretsu*.

The *Keiretsu* are comprised of 16 corporate groups that possess a more pluralist-type structure than their *Zaibatsu* predecessor. The internal structure of the (*Keiretsu*) corporate groups appear as if they are interdependent. But the larger corporate members dominate; "smaller" corporate members maintain a one-way dependency upon the larger firms.

Interlocking directorates and regular meetings of the presidents from premier corporations within a group help to facilitate group cohesion through informal and formal channels of communication. The presidents' club (*shacho-kai*) is formally recognized as a group's policy coordinating body. Interlocking directorates (the

product of cross-shareholdings by corporate members) remains a prevalent practice in Japan.

In sum, the Keiretsu promote cross-shareholding which encourages participants to establish and maintain long-term group relationships at the major corporate level. This results in a relatively few elite groups controlling Japan's major industries. Corporate elitism also is cultivated by large corporate lobbying organizations, particularly the Japan Federation of Economic Organizations, i.e. the Keidanren.

The Keidanren (a large national federation) communicates the interests of the entire business community to the public and the government bureaucracy; its expressed purpose is to influence government policy. This federation operates through a number of standing committees that have established close working relationships with respective government bureaus and agencies, particularly the Ministry of International Trade and Industry (MITI) and the MOF.

The MITI is the primary section of the government bureaucracy that regulates the corporate sector through its use of "administrative guidance." Administrative guidance refers to exercising influence through "non-authoritative" and "voluntary" means to achieve administrative goals.

A discussion of the Japanese corporate sector would not be complete without mentioning Japan's relatively harmonious relationship between corporate management and labor. Large corporations strive to maintain harmonious labor relations through their enterprise union: an in-house union that often includes all of its employees regardless of occupation. Corporate management frequently attempts to avoid conflict with its (in-house) enterprise union by establishing procedures for consultation with the union on all matters that involve important labor decisions. These procedures permit the union to have input into the company's annual budget, particularly with respect to manpower budgets. The in-house union expects management to discuss openly all anticipated changes involving labor. In addition, industry-based bonuses for managers do not encourage suppressing workers' compensation and benefits.¹

Japanese Socio-Economic Environment

The Japanese socio-economic environment is extremely complex. Prominent social features include the concepts of group consciousness and harmony. Salient political traits consist of centralization, conservatism, and continuity. Major economic qualities include GNP-ism and investment-led growth.

Social Features

Group consciousness (an extremely high emotional attachment to a set of individuals within a frame) forms the basis for a Japanese social organization. A frame refers to a relationship due to social context or situational location, e.g. employees of the same company. Japanese tradition promotes frame-based grouping. The ultimate threat of ostracism faces anyone who deviates from group norms.

Japanese group consciousness promotes interdependence, a continuum (location) mentality, psychological dependence, reciprocity of obligations and compassion, and requires complete commitment. The Japanese culture encourages interdependence

within a frame by assigning work to groups and by popular slogans, e.g. the employer and its employees are bound as one by fate. A continuum (location) mentality classifies individuals into three social categories: inner, intermediate, and outer. Those within a particular frame view the world as us against them. The Japanese view self as an interactive self relative to others within one's frame. This increases psychological dependence on the group which provides authority, approval, and security.

Reciprocity requires individuals to subordinate their own identities to enhance their group's well-being and to promote cooperative rather than competitive behavior. Reciprocity of obligations and compassion promote a strong emotional bond. All members have a voluntary duty to behave according to group norms. A long tenure enables an employee to accumulate social capital (prestige) that is not transferable if one moves to another group or company. The Japanese culture fosters complete commitment by employees within their company and by companies within a corporate grouping.

Harmony (*wa*) is a core value, an eminent value, based upon a Confucian social order. Confucianism does not recognize a "good/bad" dichotomy: instead, a balance of complementary forces is stressed. In practice, this favors consensus over winners and losers, and subtlety over clarity. The former encourages the avoidance of litigation, while the latter makes it difficult to develop contractual relationships. This consensus/subtle orientation may undermine an imported Western legal system, e.g. the (German) Commercial Code or the (US) SEL.

Political Traits

Three interlocking hierarchies (the Liberal Democratic Party (LDP), corporate sector, and government bureaucracy) govern Japan through a centralized political process. These hierarchies are interlocked by a network of mutually reinforcing ties, i.e. an interdependency exists. A passive electorate accepts this elitist combine, probably owing to the nation's economic prosperity.

The LDP controls the National Assembly (Diet). The Diet selects the Prime Minister and possesses formal legislative power. The LDP is conservative; the Party resists fundamental changes and emphasizes stability and order which the Japanese business sector views as an essential condition for maintaining economic growth.²

Corporate management and government bureaucrats covet the LDP's legislative support. Both groups have some leverage; the LDP is dependent upon the corporate sector for financial support and technical expertise, while the government bureaucrats supply valuable research and formulate policy. In addition, the LDP and corporate sector offer career opportunities to ambitious government bureaucrats.

Economic Qualities

Japan's primary economic goal (since 1955) has been to increase its gross national product (GNP). Adherence to a GNP-ism objective has resulted in rapid economic growth. The Japanese economy is now second only to the United States among non-communist countries. The Japanese have emphasized growth in production rather than distribution of wealth, i.e. making the pie larger takes precedence over slicing up the pie. Thus, the Japanese government's support has been directed at expanding

capacity rather than at social welfare programs, controlling environmental pollution, or providing an adequate social security program.

Although Japan's economic success may have been guided by MITI, the real engine of growth has been the formation of productive capital investment.³ The Japanese strong propensity to save, particularly with banks, creates a large reservoir of capital funds for investment purpose. Meanwhile, reciprocal investments between the banks and corporations result in banks being willing to lend funds, even to financially troubled (major) companies during hard times. In return, the major corporations roll-over or even borrow funds, to help banks, when surplus money exists. In addition, the government (particularly the MOF's influence over the Bank of Japan) maintains low discount rates that result in extremely low interest rates for bank borrowing, i.e. a cooperative monetary policy. The banks also perceive the MOF as a lender of last resort, ready to provide a bail-out should an important corporation be faced with bankruptcy. Japanese economic growth has been financed primarily through bank debt.

Intrusive Events

Contemporary Japanese financial reporting requires a formal dual reporting process without grassroots support. Dual reporting refers to Commercial Code and SEL-based financial reports. A publicly owned company usually prepares two sets of financial statements. The SEL financial report is similar to the code, but contains more detail, and is filed with the MOF's Securities Bureau. The corporate shareholders receive the (condensed) code-based report. The government bureaucracy receives both reports; the SEL goes to the MOF and the code report goes to the MOJ.

The government views financial reporting as part of Japan's "modernization" process, a necessary step to compete with Western economic powers. Modernization refers to the effort (to appear) to become more like the Western world in response to pressure from Western nations, particularly the United States. McKinnon (1986) describes two historical events that are symbolic of such pressure: the arrival of Commodore Perry's "black ships" and subsequent military intimidation to reverse Japan's self-imposed isolation during the latter half of the nineteenth century, and the American occupation after the Second World War.

Perry's visit forced Japan to interact (trade) with Western nations, and thereby created a need to establish "modern" political, legal, and corporate infrastructures. Failure to "modernize" would have perpetuated Japan's exploitation by Western nations through unequal treaties.⁴ Japan quickly adopted a Western legal system based upon European sources that was acceptable to Western nations, who then revised the unequal treaties.

A prominent feature of "modern" Japanese law was the Commercial Code (modeled after German law) that addresses external reporting requirements of corporations. "Modern" Japanese law (including the Commercial Code's section that requires financial reporting) is a reaction to an intrusive event, i.e. the oppressive Western nation's trading policies.

The American occupation after the Second World War attempted to establish a democratic and economically sound nation. During the occupation (1945 to 1952),

the powerful Zaibatsu was “dissolved” and a mass distribution of corporate shareholdings to the public took place to promote democracy. The MOF was selected to try to ensure an existence of a fair securities market and responded by promulgating the SEL (1948). The Japanese patterned the SEL after the US Securities Act of 1934, and established the MOF’s Securities Bureau to regulate the newly established stock exchanges’ activities. The SEL requires publicly-held corporations to file annual audited financial statements with the Securities Bureau. Japan’s “modernization” was a reaction to an intrusive event, i.e. the presence of US forces after the Second World War.

Both the code and SEL-based financial reports appear to have been direct responses to external (Western) pressures, i.e. a cultural importation. Financial reporting is not intrinsic to the Japanese culture.

Conclusion: An Incongruent Objective? Form over Substance?

This modified exogenist investigation reveals that the Japanese financial accounting process is influenced by a fusion of power among the government bureaucracy, major banks, and large corporations. The bankers and corporate executives often communicate their expectations through the Keidanren to the MITI and the MOF. Meanwhile, the MITI and the MOF rely upon the approval from finance and business to legitimize their government’s macro-economic policies.

The Japanese are a production-conscious society; efforts to make the total pie bigger is consistent with group harmony; whereas, a conflict over wealth distribution among individuals is inconsistent with social norms. Group members are sensitive to fellow constituents and openly communicate with fellow members, but they do not recognize the existence of non-members, e.g. non-related institutional investors with speculative motives are outsiders.

The aforementioned description raises a question with respect to whether there is much authoritative support for the stated objective of financial reporting in Japan, particularly to ensure usefulness. The Japanese objective is identical to that advanced by the US Financial Accounting Standards Board’s Statement of Financial Accounting Concepts Number 1:

Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions.

But financial reporting is a cultural importation that has little support within Japan. Its major proponent (the government bureaucracy) is strongly influenced by the corporate sector which prefers selective (restrictive) sharing of information. Hence the government’s response to Western pressure to appear “modern” is to implement formal reporting requirements that (superficially) imitate European and US accounting practices.

This imposition may produce questionable compliance with respect to the stated financial reporting objectives, since this reporting process is not central to the Japanese banking and corporate sectors. The major suppliers of capital do not demand financial

statements. The banks generally do not rely upon audited financial statements; they frequently employ their own audit personnel to investigate a company's credit worthiness. Banks and related corporate investors (Keiretsu members) have formal and informal access to financial information.

Given the above scenario, management may (and often does) respond to mandated financial reporting by emphasizing form rather than substance. Form refers to meeting the minimum required by government mandates, including financial statement audits which management regards as perfunctory and ceremonial. Substantive financial information is provided to prominent parties (Keiretsu members and their in-house union) through alternative means.

This investigation reveals that investors and creditors (who are members of a corporate group), and others (labour and government) have formal and informal access to financial information. Such access effectively subverts any strong demand for published financial reporting. The strong (interdependent) relationships among elite bankers, major corporate executives, and government bureaucrats encourage the existence of information asymmetries. Furthermore, the needs of non-related (outside) investors are given a relatively low priority in Japan, even though they are the primary users of the financial reports.

In sum, corporate financial reports (both the code and SEL) may lack significance as communication devices in a country where financial information is exchanged within a traditional system of formal and informal structures. The Japanese group consciousness, both within and among companies, may contribute to what appears to be an unnecessary and unsuccessful cultural importation. The Japanese managers do not have an incentive, nor do they feel obligated to provide substantive financial information to outsiders. The Keiretsu members (both investors and creditors) have alternative means of acquiring desired financial information. The limited size of the accounting profession and the (pro-Keiretsu) government's role of standard-setter may also contribute to financial reporting's insignificance. The government, capital funding, and corporate sectors all share a mutual dependency. Finally, non-related users of financial reports (speculative investors) have little influence upon the process of financial reporting in Japan. Speculative investors do not contribute significant sources of capital funds, nor can they threaten to take-over a company due to cross-shareholding practices.

This study suggests that future nation-specific studies of financial reporting, as well as studies that compare reporting practices across countries, should be expanded to include an evaluation of congruity. Each nation's stated financial reporting objective, standards and policies, etc. should be compared with its socio-economic infrastructure (the process, its neighboring social system, and its environmental characteristics) to ensure compatibility so that an accurate description may be reported.

Notes

1. In contrast, US profit-sharing bonuses for managers create a zero sum game between management and labor. One side's benefit is at the expense of the other side.
2. The LDP's control of the Diet for over 30 years has resulted in a continuity in conservative leadership.

3. MITI is the primary section of the government bureaucracy that administers "industrial policies" to promote the growth of industry.
4. McKinnon (1986) describes the treaties to be unequal because they were based solely upon the law of the Western nation concerned. Japan's traditional legal system included unwritten civil, criminal, and commercial laws, and an "unstructured" procedure for settling disputes that were beyond the militarily dominant Western nations' comprehension and thereby unacceptable. Traditional Japanese law and enforcement were perceived to be archaic by the West.

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Functional Currency Smoothing and Managerial Incentives: An Empirical Test

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Key words: Income smoothing; Earnings volatility reduction; FASB No. 52

Abstract: *Statement of Financial Accounting Standard No. 52 allows managers flexibility in determining the foreign currency adjustment included in reported earnings. In fact, the smoothing literature suggests that managers use such flexibility to smooth income. This study examines the association between smoothing behavior and explanatory variables which may motivate it. The findings provide evidence that smoothing is associated with foreign currency adjustment variability. Other economic variables, such as assets, managerial ownership, leverage, earnings volatility, and the presence of bonus plans, do not explain significantly the multiperiod smoothing effect of accounting flexibility.*

There is considerable research on managerial motivation to reduce earnings volatility. Moses (1987) has documented that smoothing through accounting choices is associated with firm size, bonus plans, divergence of actual earnings from expectation and the impact of accounting change on the level of earnings.¹

The income-smoothing literature has also argued that accounting choices are used to reduce earnings fluctuations rather than to maximize reported earnings.^{1,2} However, using accounting choices as smoothing techniques has disadvantages. For example, accounting changes are visible to shareholders because they require disclosure according to APB opinion No. 20. Paragraph 17 of the APB opinion No. 20, Accounting Changes, requires that a change in accounting principle and its effect on income be disclosed in the financial statements. Such disclosure would minimize the effect of income smoothing on managers' wealth. Thus, managers would prefer more subtle smoothing techniques that do not require disclosure.

This study examines managers' motivation to reduce earnings volatility through smoothing techniques that do not require disclosure. Specifically, the technique in this study is the accounting flexibility allowed to managers in Statement of Financial

Accounting Standard (SFAS) No. 52, foreign currency translation.³ In determining the foreign currency adjustment included in income, SFAS No. 52 permits management greater flexibility through functional currency choice, foreign currency transactions, and dollar-denominated balances in foreign operations having local functional currency. For example, functional currency choice determines the translation method (temporal or current), which in turn influences whether translation adjustment is included or excluded from reported earnings.⁴ As for currency transactions, some transaction adjustments are included in income, while others are excluded. Under SFAS No. 52, for example, currency adjustments arising from foreign currency transactions designated as economic hedges of a net investment are not included in net income. Such exclusion could be used to manipulate earnings.

Using dollar-denominated balances is yet another significant way for managers to influence foreign currency adjustments included in earnings. If a foreign entity with foreign functional currency has dollar-denominated balances, then translation under SFAS No. 52 can produce a gain or loss impossible under SFAS No. 8. Such a result occurs because the foreign entity must first translate its dollar-denominated balances to the local functional currency and report the resulting translation adjustment to income. However, in translating local financial statements back to US dollars as part of the general translation the resulting translation adjustments are reported in the stockholder's equity, bypassing the income statement. But under SFAS No. 8, the foreign entity would report translation adjustments to income, effectively reversing gains or losses arising from translation to the local currency. This analysis implies that managers could reduce earnings volatility through appropriate management of dollar-denominated balances in foreign operations with local functional currency.

The next section of the paper defines and develops the smoothing measure. Following a report on the sample, a set of firm-specific explanatory factors is identified. The association between explanatory variables and smoothing is then analyzed. The final section provides conclusions.

The Smoothing Measure

The income-smoothing hypothesis predicts that firms will attempt to minimize earnings volatility. In particular, when earnings are unusually high, firms will choose earnings-reducing accruals, and when earnings are unusually low, firms will choose earnings-increasing accruals. This study focuses on income-smoothing during the SFAS No. 52 period through management of foreign currency adjustments. The nature of foreign currency transactions, functional currency determination, and dollar-denominated balances (see previous discussion) may all manipulate this adjustment. Such smoothing tools were not available to management under SFAS No. 8.

The functional currency tool requires further clarification. Douppnik and Evans (1989) documented that management functional currency determination is biased toward selecting foreign currency as the functional currency.⁵ This bias implies that translation adjustments associated with exchange rate variations are excluded from net income. Continued exclusion may help reduce earnings gyration over time.

In addition to the above type of smoothing, Evans and Douppnik (1986), and Mehta and Thapa (1991) find that firms change functional currency.⁶⁻⁸ The desire to smooth income may motivate such changes. The puzzle is how firms could change functional currency to smooth income when functional currency is a matter of fact. Paragraph 9 of SFAS No. 52 allows firms to change functional currency if economic facts change. The crucial point is that variations in exchange rates, which caused earnings gyrations are directly associated with economic facts (indicator of functional currency, e.g., cash flow, sale price, financing – see paragraph 42 of SFAS No. 52). The implication is that increasing or decreasing exchange rates may justify functional currency changes. For example, management may change cash flow, sale price, sale market, financing, location of product cost, or relationships between foreign operations and parent companies because of exchange rates variation. This type of change can justify altering functional currency in order to smooth income.⁹

To corroborate further the premise that the flexibility allowed in SFAS No. 52 is used to reduce earnings volatility, 35 financial controllers/vice presidents of finance were asked to provide practical insight on the effect of SFAS No. 52 on earnings volatility. The results reported in Appendix A indicate that functional currency choice, foreign currency transactions, and keeping dollar-denominated balance in foreign subsidiaries with foreign functional currency are tools used to reduce earnings volatility. It appears from the evidence that firms used SFAS No., 52 to smooth income.

Such income-smoothing technique is very difficult to model. We used a time series approach to determine smoothing and non-smoothing firms. This approach is based on the time series relationship between earnings (E), earnings before foreign currency adjustment (EB) and foreign currency adjustment included in reported earnings (FD) expressed as follows:

$$E = EB + FD \quad (1)$$

and

$$\text{Var. (E)} = \text{Var. (EB)} + \text{Var. (FD)} + 2\text{COV. (EB, FD)} \quad (2)$$

where Var. = variance, COV. = covariance. The covariance of EB and FD determines whether foreign currency adjustment increases or decreases earnings' variability [Var. (E)]. This covariance is defined as follows:

$$\text{COV. (EB, FD)} = \sum (EB - \bar{EB})(FD - \bar{FD}) \quad (3)$$

Each firm's covariance during the post-SFAS No. 52 period was calculated (1983–86). By definition, a negative covariance indicates that foreign currency adjustment reduces earnings volatility because the variance of FD is reduced by the negative 2 COV. (EB, FD). Firms with such reductions in volatility are classified as income smoothing, while firms with positive covariance are called non-smoothing.

An advantage of this smoothing measure is that it identifies achieved smoothing. Moses (1987) suggests that a one-period measure may reflect attempts to smooth, while a multi-period approach may capture the achievement of smoothing.¹ The multi-period smoothing measure helps ensure that the observed smoothing is not a one-time accident.

Table 1. Two-Digit Industry Distributions and Classifications of the Sample into Smoothing and Non-smoothing Groups**A: Total sample ($N = 73$)**

SIC ^a	No.	SIC	No.	SIC	No.	SIC	No.	SIC	No.
10	2	23	1	30	1	36	4	44	1
13	1	26	2	32	2	37	5	61	1
20	2	27	2	33	2	38	4	63	1
21	1	28	17	34	4	39	1	73	2
22	1	29	2	35	11	42	1	75	1

Classification of firms^b**B: Smoothing firms ($N = 46$)**

SIC ^a	No.	SIC	No.	SIC	No.	SIC	No.	SIC	No.
10	1	23	1	30	1	36	4	44	1
13	1	26	1	32	2	37	4	61	1
20	2	27	1	33	1	38	2	63	1
21	1	28	8	34	1	39	1	73	—
22	1	29	2	35	7	42	—	75	1

C: Non-smoothing firms ($N = 27$)

SIC ^a	No.	SIC	No.	SIC	No.	SIC	No.	SIC	No.
10	1	23	—	30	1	36	1	44	—
13	—	26	1	32	—	37	1	61	—
20	—	27	1	33	1	38	2	63	—
21	—	28	9	34	3	39	—	73	2
22	—	29	—	35	4	42	1	75	—

^aSIC refers to the two-digit Standard Industrial Classification and No. refers to the number of firms in each two-digit SIC.

^bThe total sample was classified into smoothing firms and non-smoothing firms based on the sign of the covariance between earnings before foreign currency adjustments and foreign currency adjustment. Smooth firms have negative covariance, while non-smoothing firms have positive covariance.

Sample Description

The primary database consists of 489 firms that disclose quarterly foreign currency adjustment on the Compustat commercial tape. From this database the sample was selected according to the following criteria: (1) quarterly foreign currency adjustments included in net income available from 1976 to 1986, and (2) quarterly net income available on the quarterly Compustat tape from 1976 to 1986. These criteria are essential in identifying the smoothing and non-smoothing firms.

These selection criteria reduce the initial sample from 489 to 73 firms because of missing values on quarterly foreign currency adjustment included in net income. Two-digit industry distributions of the total sample, smoothing and non-smoothing groups, are reported in Table 1. The financial data on the sample firms were obtained from the Compustat Annual Industrial Tape.

Explanatory Variables

Foreign Currency Adjustment

SFAS No. 8 increased foreign currency adjustment volatility. Multi-national managers complained that foreign currency adjustment volatility increased earnings volatility.

Managers were against accounting rules that increase earnings volatility because volatility increased the market measure of risk, which decreases stock prices. Such decrease in stock prices, according to Fame (1980), reduced managers' ability to find a similar job in the labor market as well as the value of their stock ownership.¹⁰ Because of the wealth effect, managers with higher foreign currency adjustment volatility are expected to smooth income to maximize their wealth.

H₁: Firms with higher foreign currency adjustment volatility are more likely to smooth income through SFAS No. 52's flexibility.

H₂: Firms with higher earnings volatility are more likely to smooth income.

Size Hypothesis

Studies have shown that economic consequences are proportional to firm size.^{11–13} Large firms are more likely to have greater stock price reduction due to higher earnings volatility than other firms. Large earnings fluctuations may attract the attention of regulators or congressional action than small variation in earnings. The 1979 oil windfall tax provides a good example. Consequently, larger firms have a greater incentive to smooth income. Moses' (1987) results are consistent with this proposition.¹

H₃: Large firms are more likely to smooth income than small firms.

Ownership and Bonus Plan Hypothesis

Gordon (1964) suggested that shareholders preferred a stable earnings to volatile earnings trend.¹⁴ Managers thus have the incentive to follow this preference. Following Dhaliwal et al. (1982), this study hypothesizes that management controlled firms have greater incentive than owner-controlled to smooth income.¹⁵

H₄: Management-controlled firms are more likely to smooth income than owner-controlled firms.

H₅: Firms with bonus plan are more likely to smooth income than other firms.

Hypothesis 5 is based on Healy (1985), which suggests that managers have an incentive to operate within the upper and lower bound of their bonus plan or attain a target level of earnings growth.¹⁶ Therefore, managers with earnings below the target level of growth have reason to adopt an income-increasing accounting method, while managers with earnings above target levels would adopt income-decreasing accruals.

Similarly, managers with stock options or bonuses have greater incentive to protect their stock value. Reducing earnings volatility through SFAS No. 52's flexibility is one subtle way to protect managerial wealth.

Leverage Hypothesis

Moses (1987) and Ronen and Sudan (1981) have documented that firms smooth income to reduce the market measure of their risk.^{1,17} Reducing debt equity ratio or

Table 2. Univariate Tests of the Association Between Explanatory Variables and Income Smoothing Through SFAS No. 52

Variables	Hypothesis	Mann-Whitney two-sample test				Hypothesized Association with smoothing	Variance inflation factors (VIF)
		Smoothing (1) mean	Non-smoothing (2) mean	Z-Value	Probability		
FCAP	(1) > (2)	2.947	2.261	2.02	0.043**	+	1.136
Assets	(1) > (2)	3279	2689	0.09	0.922	+	1.103
Ownership	(1) > (2)	0.179	0.136	0.42	0.673	+	1.154
Leverage	(1) > (2)	0.281	0.250	0.82	0.413	+	1.138
EVOT	(1) > (1)	1.195	0.750	0.14	0.886	+	1.107
BPlan	(1) > (2)	2.366	1.184	1.15	0.251	+	1.194

VIF measures the interrelationship between the independent variables. According to Marquardt (1970), multi-collinearity is troublesome only when it exceeds 10.00.¹⁹

Variable definitions

- $FCAP_i = \left| \frac{\text{Standard deviation of } CA_t}{\text{Mean } CA_t} \right|$
 = Foreign currency adjustment volatility for firm i at time period 1983–1986
 CA_t = Quarterly foreign currency adjustment included in earnings for firm i at time period t ($t = 1983, \dots, 1986$).
 $Assets_i$ = Measure of firm size. This measure is highly correlated with sales, and number of foreign operations.
 $Leverage_i = \frac{\text{Mean long-term debt (1983–1986)}}{\text{Mean total assets (1983–1986)}}$
 = Debt equity ratio.
 $BPlan$ = 1 if bonus plan exists.
 0 if no bonus plan exist
 $Ownership$ = Percentage of management stock ownership.
 $EVOT = \left| \frac{\text{Standard deviation of } NE_t}{\text{Mean } NE_t} \right|$
 = Earnings volatility
 NE_t = Quarterly reported earnings for firm i at time period t ($t = 1983, \dots, 1986$).

avoiding technical default on debt agreement could minimize this risk. Since risk minimization motivates both income-smoothing and debt equity reduction this study hypothesizes that income-smoothing firms have less debt equity ratio than non-smoothing firms.

H_6 : Smoothing firms have less debt equity ratio then non-smoothing firms.

Univariate Tests

Multi-national firms that reported foreign currency adjustments included in earnings were divided into firms that smoothed income through the flexibility allowed in SFAS No. 52 and others that did not smooth income. The Mann–Whitney two-

Table 3. Multivariate Logistic Regression Analysis of Income Smoothing Through the Flexibility Allowed Under SFAS No. 52

	Intercept	Ownership	EVOT	Assets	FCAP	BPlan	Leverage
Hypothesized Size		+	+	+	+	+	+
Coefficient	−0.669	0.671	−0.013	0.341	1.108	−0.111	0.709
χ^2	(0.18)	(0.62)	(0.01)	(0.56)	(3.04)	(0.08)	(0.77)
Probability	0.675	0.430	0.939	0.453	0.081 *	0.775	0.381

Dependent variable = 1 for smoothing and 0 otherwise.
*Significant at the 0.10 level. Model classification accuracy 87.2%.

sample Z-test for differences in group means for each of the explanatory variables are reported in Table 2. The explanatory variables FCAP, Assets, Ownership, Leverage, EVOT, and BPlan all have the predicted sign. However, only foreign currency adjustment volatility (FCAP) is significant at the 0.05 level. Thus, the univariate result suggests that income smoothing through SFAS No. 52 flexibility is associated with foreign currency adjustment volatility. Firms with larger volatility are more likely to smooth income than other firms.

Table 2 also reports the variance inflation factors (VIF). The VIF measures the interrelationship between the independent variables. Contrasting with correlation tests, the VIF also indicates whether explanatory variables are correlated with their interaction terms.¹⁸ According to Marquardt (1970), multi-collinearity is troublesome only when VIF exceeds 10.0.¹⁹ The result of VIF shows that explanatory variables are not correlated, thus allowing multivariate analysis to be performed.

Multivariate Tests

Multivariate tests were conducted using both ordinary least-squares and logistic regression with smoothing as the dependent variable. Logistic regression was used because the dependent variable is categorical: for example, smoothing is coded (1) and non-smoothing is coded (0). Logistic regression is the most appropriate methodology when the dependent variable is a categorical or dummy variable.²⁰

Table 3 presents the multivariate logistic results. The explanatory variables – ownership, EVOT, Assets, BPlan and Leverage – are not significant at the 0.10 level. Only FCAP is significant at the 0.10 level and has the predicted sign. This result implies that only FCAP influenced managerial decisions to smooth income through SFAS No. 52’s flexibility. This result is also consistent with the univariate results.

Noreen (1988) compared the performance of ordinary least-square regression (OLS) and probit.²¹ Noreen found that the OLS performs at least as well as probit.

Table 4. Multivariate Ordinary Least-Square Regression Analysis of Income Smoothing Through the Flexibility Allowed Under SFAS No. 52

	Intercept	Ownership	EVOT	Assets	FCAP	BPlan	Leverage	\bar{R}
Hypothesized size		+	+	+	+	+	+	
coefficient	0.269	0.134	0.141	0.108	0.228	−0.021	0.119	
t-Value	(0.72)	(0.75)	(0.87)	(1.01)	(1.73)	(−0.25)	(0.67)	
Probability	0.474	0.455	0.387	0.319	0.089 *	0.807	0.506	0.08

*Significant at the 0.10 level.

Following Noreen (1988) OLS was also used to analyze the association between smoothing and explanatory variables. The results for these explanatory variables, provided in Table 4, are consistent with the univariate and logistic regression results. Only FCAP explains income smoothing. Thus, OLS performs as well as logistic regression for our sample.

Overall, the results indicate that firms with high FCAP smooth income by manipulating SFAS No. 52 flexibility. These results are consistent with Douppnik and Evans' (1989) findings that functional currency choices are made in a manner to smooth income.⁵ The results of the questionnaire reported in Appendix A also appear to indicate that SFAS No. 52 is used to reduce earnings volatility.

Conclusion

SFAS No. 52 provides managers with a subtle device to smooth income through functional currency choice, foreign currency transactions and dollar-denominated balances in foreign subsidiaries. The existence of these smoothing tools is corroborated in previous studies and supported by the questionnaire results reported in Appendix A.

Since little is known of why firms smooth or do not smooth income, a normative model was used to identify the various groups. These groups were analyzed using the positive accounting framework. The results indicate that only foreign currency adjustment volatility appears to explain firms' income-smoothing behavior. Thus, firms with larger foreign currency adjustment volatility appear most likely to manipulate SFAS No. 52 flexibility.

Appendix A

SFAS No. 52 and Management Flexibility: A Real World Evidence

No.	Questions from the questionnaire	Percentage of Responses	
		YES	NO
A3	Did FASB No. 52 reduce earnings volatility for your company?	63**	37**
B1	Based on your practical knowledge of FASB No. 52, could firm use functional currency choice as a mechanism to reduce earnings volatility (manage earnings)?	63*	37
B2	Could the exclusion of translation adjustments from income statements (in some cases) reduce earnings volatility?	88**	12

Appendix A continued...

No.	Questions from the questionnaire	Percentage of Responses	
		YES	NO
B3	FASB No. 52 requires certain transaction adjustments to be excluded from income statements. Given this new requirement, could firm reduce earnings volatility through foreign currency translations?	88**	12
B4 2B6	Could firms reduce earnings volatility by properly maintaining dollar-denominated balances in foreign operations with a local functional currency?	63*	37
B5	Could firms change functional currency because of major changes in international business environment (e.g., exchange rates change)?	50*	50*

A first draft of the questionnaire was reviewed with a faculty member experienced in questionnaires to reduce the likelihood managers would misunderstand the questions. Then a revised draft was completed by the Controller or Vice President of Finance from the sample firms. Since no question was raised by the respondent, the questionnaire was mailed to Controllers or Vice President of Finance from the remaining 35 firms. A response rate of 19% is achieved.

** Percentage above 70.

* Percentage above 50.

Effect of FASB No. 52 – Foreign Currency Translation – on Earnings Volatility (Please circle the most correct answer)

- A.
- 1. How did FASB No. 52 affect your company’s earnings?
1. Increase 2 Decrease 3. No effect
 - 2. How did FASB No. 52 affect your company’s earnings volatility?
1. Increase 2. Decrease 3. No effect
 - 3. Did FASB No. 52 reduce earnings volatility for your company?
1. Yes 2. No
 - 4. Based on your practical knowledge of FASB No. 52, do you expect FASB No. 52 to reduce earnings volatility?
1. Yes 2. No
 - 5. Please describe how firm could use FASB No. 52 to reduce earnings volatility.
- B.
- 1. Based on your practical knowledge of FASB No. 52, could firm use functional currency choice as a mechanism to reduce earnings volatility (manage earnings)?
1. Yes 2. No
 - 2. Could the exclusion of translation adjustments from income statements (in some cases) reduce earnings volatility?
1. Yes 2. No

3. FASB No. 52 requires certain transaction adjustments to be excluded from income statements. Given this new requirement, could firm reduce earnings volatility through foreign currency translations?
1. Yes 2. No
4. Could firms reduce earnings volatility by properly maintaining dollar-denominated balances in foreign operations with a local functional currency?
1. Yes 2. No
5. Could firms change functional currency because of major changes in international business environment (e.g., exchange rates change)?
1. Yes 2. No
6. If a foreign operation with local functional currency has dollar-denominated balances, FASB No. 52 requires that the amount be remeasured in local functional currency, and resulting translation adjustment reported in functional currency income statement. However, translating local financial statements into US dollars requires reporting the resulting adjustments in stockholders' equity, bypassing the income statement. Could firms use dollar-denominated balances to reduce earnings volatility?
1. Yes 2. No

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A Comparison of Earnings per Share Reporting for United States and Canadian Companies

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Key words: Earnings; Canadian; Judgement; Diluted; Primary; EPS

Abstract: *Reporting earnings per share for US firms with complex capital structures is based primarily on a complicated set of accounting rules, in particular Accounting Principles Board Opinion (APB) no.15. In Canada the earnings per share reporting is based on Section 3500 of the Canadian Institute of Chartered Accountants (CICA) Handbook. The Handbook in turn suggests that the accountant's professional judgment be a major determinant of the reporting decisions. It has been suggested that certain aspects of the CICA method are theoretically more defensible than that of the APB. We compare the association of common stock returns and various earnings per share data for a sample of Canadian firms and a sample of US firms. We find no statistical difference between the two samples.*

The reporting of earnings per share (EPS) when potentially dilutive securities, such as convertibles, rights, warrants, and options, are outstanding is not uniform in the United States and Canada. It is not clear that one method conveys more information than the other. We address this issue empirically by comparing the association of the reported EPS data with stock market returns between the two countries. Our results show that earning measures other than those presented in the financial reports are more closely related to stock returns and that the associations are not different between countries.

The Canadian method for disclosing potential dilution is similar to the United States in that two EPS ratio numbers are presented in the event that potential dilution is determined to be a material amount. In Canada basic and fully diluted EPS is presented while primary and fully diluted EPS is reported in the United States.

Accounting Principles Board (APB) Opinion no. 15 states "The purpose of the fully diluted earnings per share presentation is to show the maximum potential dilution of current earnings per share on a prospective basis" (Ref. 1, para. 40).

The Canadian Institute of Chartered Accountants (CICA) 3500.29 states "... disclosure of fully diluted earnings per share figures shows the maximum dilution of current earnings which potential conversions, exercises and contingent issuances would have caused had they occurred during the current period."

Canadian – United States Differences

While the stated objectives are similar, EPS reporting in the United States and Canada differs in at least three important respects. First, professional judgment determines the materiality of dilution in Canada, while materiality is defined by a 3 percent rule in the United States. Second, the concept of common stock equivalence as used in computing primary EPS in the United States is not used in Canadian reporting. Third, the treasury stock method and its modified version as used in US reporting are not used in fully diluted EPS determination in Canada. Instead, once again a professional judgment determination is used. In general, Canadian reporting places greater reliance on professional judgment while US reporting standards provide specific regulation for EPS.

In Canada, determination of the materiality of dilution is based on professional judgment. If fully diluted EPS is materially less than nondiluted earnings, both basic EPS and fully diluted EPS are presented. In the United States, firms are required to present primary or fully diluted EPS if these numbers are less than nondiluted earnings by 3 percent or more.

Primary EPS reflects adjustments for securities deemed to be common stock equivalents. Rights, warrants, and options are common stock equivalents, and if their exercise would result in dilution of ≥ 3 percent they are assumed to have been exercised in the computation of primary EPS. Convertible securities may also be common stock equivalents if so determined by a "cash yield test" as of the time of issuance (FASB no. 55). Specifically, if at the date of issuance the convertible (debt or preferred stock) would have provided the purchasers a cash internal rate of return less than two-thirds of the rate on nonconvertible corporate AA bonds, it is considered to have been sold primarily for its equity character and deemed to be a common stock equivalent. If so, primary EPS also reflects an assumption of conversion. Thus, primary EPS may differ greatly from nondiluted EPS. The Canadian basic EPS appears to be adjusted only for actual conversions that occur during the reporting period. Potential exercises of rights, warrants, and options are reflected only in fully diluted EPS in the Canadian system. In the United States both potential conversions and exercises are reflected in primary EPS if they are common stock equivalents. They are also reflected in fully diluted EPS together with other potentially dilutive securities that are not common stock equivalents. In summary, in the United States both primary and fully diluted EPS numbers reflect potential dilution through common stock equivalents and other potentially dilutive securities. In Canadian reporting there appears to be no counterpart to primary EPS as no distinction is made between

common stock equivalents and other potentially dilutive securities. Basic EPS appears to reflect approximately actual net income per share.

In the computing of earnings and the number of shares to be used in primary and fully diluted earnings ratios, the treasury stock method and modified treasury stock methods are used to reflect exercises in US accounting. This method assumes that hypothetical cash proceeds from the exercise are used to purchase up to 20 percent of the outstanding common thereby reducing the potential dilution. If the cash receipts exceed the market value of 20 per cent of the outstanding common stock, the excess is assumed to be used first to retire short-term and long-term debt and then to be invested in US government securities (Ref. 1, para. 38). The assumptions regarding utilization of excess funds increase the numerator of the earning ratio by the after-tax interest expense associated with the convertible security or by the after-tax interest hypothetically earned on investments in US government securities. Barlev argues that the Canadian method of reflecting warrants in diluted EPS is a more theoretically defensible approach because the US method (treasury stock methods) arbitrarily uses a 20 percent benchmark in determining use of funds and has other deficiencies.²

In Canadian accounting the funds received from exercises are assumed to be invested at an appropriate rate of interest. According to Canadian accounting (CICA 3500.37), "The appropriate rate of return for imputing earnings must be a matter of judgment in each case and should be disclosed together with the dollar amount of imputed earnings after income taxes."³ To the extent that the phrase "appropriate rate of return" can be interpreted as the firm's cost of capital, one may argue that the Canadian method is better. However, determination of the appropriate rate of return is also a "matter of judgment." The assumed rate of return would be negatively related to potential dilution, *ceteris paribus*. Since the determination of the materiality of potential dilution is also based on "judgment" one may question whether use of judgment practiced in the Canadian system provides a better basis for reporting than the rules used in the US system. We examined the cross-sectional correlation of stock returns regressed on reported EPS for a sample of US and Canadian firms in hopes of shedding some light on this issue.

Hypothesis

The null hypothesis we test is:

H0: The adjusted R^2 s from regressing stock returns on reported earnings per share for Canadian firms with complex capital structures is not different from the adjusted R^2 s from regressing stock returns on reported earnings per share for US firms with complex capital structures.

Samples

Our sample of Canadian firms is selected from the COMPUSTAT Canadian file. It includes firms that have calendar fiscal year ends and that reported both basic and

fully diluted earnings per share over the period 1978–1986. We exclude financial and utility companies because they are subject to special regulation. Based on this procedure, the annual sample sizes vary across years from 108 to 155 due to data availability.

The US sample is selected from the COMPUSTAT Annual Industrial File and also excludes financial and utility companies. It includes only firms with calendar fiscal year ends that reported both primary and fully diluted earnings over the period 1978–1986. Sample firms ranging from 204 to 249 were obtained via a systematic procedure that selected every third firm that met the above criteria.

Method of Analysis

Simple cross-sectional Pearson correlation coefficients were computed by regressing annual security returns measured as $(P_t - P_{t-1} + D_t)/P_{t-1}$ on five separate measures of earnings per share for each year during the 1975–1986 period. Our analysis assumes that higher correlations imply greater relevance for market participants in valuing common stocks. We examine via paired *t*-test procedures the Canadian and US correlations.

The following definitions of earnings are used in the analysis. For the US firms primary and fully diluted earnings per share as reported in the published financial statements are taken directly from the COMPUSTAT Annual Industrial File. For the Canadian firms, basic and fully diluted earnings per share are taken directly from the COMPUSTAT Canadian file.

In addition to these reported earnings numbers, three additional earnings ratios are also computed for each sample firm. One is a simple EPS (*S*) computed by dividing the earnings before extraordinary items and discontinued operations by the average of the beginning and ending common shares outstanding.

Recent research by Wilson (1987), and Bowen, Burgstahler, and Daley (1987) have generated increased interest in the information content of cash versus accrual earnings.^{4,5} While it is beyond the scope of this study to investigate fully the information content of cash flows, we do include two per share cash flow measures in our analysis. One cash flow earnings (CF_1) is computed by adding depreciation, depletion, and amortization to the above simple earnings, and a second cash flow earnings (CF_2) is computed by adding deferred income taxes to CF_1 . All earnings variables are included in the statistical analysis as annual percentage changes.

Results

The relative ranking of the average correlation coefficients over the nine years are identical for the Canadian and US samples. The average of the nine annual cross-sectional correlation coefficients for CF_1 , CF_2 , *S*, *P* and *D* are 0.3788, 0.3433, 0.3352, 0.2656 and 0.2611 respectively, for the US sample. The average correlation coefficients for CF_1 , CF_2 , *S*, *B* and *D* are 0.3370, 0.3212, 0.3108, 0.2422 and 0.2381 respectively, for the Canadian sample. The rank orders are the same. Fisher *Z* transformations of

Table 1. Fisher Z Transformations of Simple Pearson Correlation Coefficients of Common Stock Returns, Regressed on Various Earnings Ratios

US firms						
Year	C_1	C_2	S	P	D	N
1978	0.41423	0.41569	0.70733	0.65301	0.56724	243
1979	0.49617	0.44667	0.48317	0.42295	0.46473	249
1980	0.29119	0.30974	0.29916	0.20896	0.19656	247
1981	0.60239	0.55400	0.52984	0.43123	0.43066	240
1982	0.32489	0.27986	0.23548	0.21423	0.22318	207
1983	0.33949	0.33387	0.21652	0.06719	0.07209	217
1984	0.39426	0.33924	0.29041	0.20418	0.20651	223
1985	0.39266	0.28534	0.25717	0.19988	0.18030	206
1986	0.36193	0.27881	0.20827	0.12953	0.13061	207
Average	0.40191	0.36069	0.35859	0.28123	0.27465	
Std. Dev.	0.09009	0.08870	0.16427	0.17351	0.15991	
Canadian firms						
Year	C_1	C_2	S	P	D	N
1978	0.40569	0.40668	0.30299	0.25616	0.26555	140
1979	0.49545	0.34904	0.46970	0.41093	0.42384	155
1980	0.33269	0.27981	0.37670	0.31009	0.33187	146
1981	0.48919	0.41578	0.45155	0.26537	0.25386	133
1982	0.28506	0.29972	0.23281	0.16994	0.15661	108
1983	0.29080	0.27815	0.30430	0.24821	0.24440	116
1984	0.31268	0.36476	0.18770	0.06589	0.01280	122
1985	0.16052	0.19701	0.17675	0.20676	0.21731	127
1986	0.42070	0.42070	0.42169	0.30849	0.30149	108
Average	0.35475	0.33462	0.32490	0.24909	0.24530	
Std. Dev.	0.10205	0.07199	0.10499	0.09151	0.10838	

Table 2. Pairwise *t*-test Results of Z Transformations of Simple Pearson Correlation of Stock Returns Regressed on Earnings

Earnings Variables	US firms		Canadian firms	
	t	$P(t)$	t	$P(t)$
Cash Flow 1 – cash flow 2	3.02	0.016	0.98	0.356
Cash Flow 1 – simple	0.94	0.371	1.59	0.150
Cash Flow 1 – primary (basic)	2.41	0.043	3.38	0.010
Cash Flow 1 – diluted	2.96	0.016	2.96	0.018
Cash Flow 2 – simple	0.05	0.958	0.31	0.767
Cash Flow 2 – primary (basic)	1.75	0.117	2.25	0.054
Cash Flow 2 – Diluted	2.24	0.055	2.01	0.081
Simple – primary (basic)	6.48	0.000	3.80	0.005
Simple – diluted	5.48	0.001	3.23	0.012
Primary (basic) – diluted	0.84	0.579	0.51	0.621

the correlation coefficients for both samples are shown in Table 1. Paired *t*-test results of Fisher's Z transformations for the nine years of paired observations, presented in Table 2, indicate that within each sample the significance of the differences in correlation coefficients tend to agree. Statistically significant differences are found in both samples between cash flow 1 and primary (basic), cash flow 1 and diluted, cash flow 2 and diluted, simple and primary, and simple and diluted. Both samples show no differences between cash flow 1 and simple, cash flow 2 and simple, and

Table 3. Paired *t*-test of Adjusted R^2 for Common Stock Returns Regressed on Published Earnings Per Share Ratios for US and Canadian Firms

Year	Adjusted R	
	Canada	US
1978	0.0567	0.2617
1979	0.1714	0.2229
1980	0.0946	0.0301
1981	0.0655	0.1589
1982	0.0579	0.0395
1983	0.0705	0.0345
1984	0.0231	0.0388
1985	0.0303	0.0223
1986	0.0721	0.0514
Mean	0.0714	0.0956
Std. Dev.	0.043	0.093
Paired $t = -0.88$, not significant		

primary (basic) and diluted. Different results between samples occur in only two instances. One is the difference between cash flow 1 and cash flow 2 which is significant for the US firms but not for the Canadian firms. This must be related to differences in market response to, or magnitude of deferred taxes in the two samples. The other is cash flow 2 and primary (basic) in which the Canadian sample has significant difference while the US sample is technically not significant at typical research levels. However, the 11.7 percent probability, while not technically at standard rejection levels, still may be argued as weak support for rejection for the US sample. Overall, the agreement between samples in these results is strong in that eight of the ten cases agree, one weakly agrees, and one disagrees, and in this last case the disagreement has a plausible explanation. The correlation of the reported numbers primary and diluted (US) or basic and diluted (Canadian) are not different. However, in both samples the average correlation of each of the computed earnings ratios (cash flows 1 and 2 and simple) is statistically greater than the average correlation for those of each of the reported numbers.

Paired *t*-test results of the annual adjusted multiple R^2 for regressions of stock returns on primary and fully diluted earnings per share for US companies and on basic and fully diluted earnings per share for Canadian firms are shown in Table 3. No statistically significant difference is shown as the *t* value is -0.88 . Thus, the null hypothesis of no difference between the US and Canadian methods is not rejected.

Conclusion

Canadian and US reporting of EPS are based on different assumptions, computations, and presentations. The US method is characterized by rules while the Canadian method relies to a greater extent on professional judgment. Patterns of correlation of stock returns on changes in earnings of various definitions are not different in the

United States and Canada even though the method of computing the published earnings per share differs between countries. Should these conclusions be generally applicable then one may question the value of the extensive rules, such as those of APB no. 15, found in US reporting of EPS.

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International Geographic Segment Reporting Standards: A Case for the Harmonization of Accounting and Reporting Practices

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Key words: Geographic; Harmonization; International; Reporting; Segment; Standards

Abstract: *At the international level there is considerable diversity concerning the nature and type of information to be reported in financial statements. This paper attempts to provide a historical perspective of the efforts leading to the development of geographic segment reporting standards by a number of standard-setting organizations. A comparison of these standards can underline areas of differences and highlight their significant contributions. It is the purpose of this paper, by a review of the various sets of geographic segment reporting standards, to contribute to the harmonization of these standards and the evolving international framework for accounting and reporting.*

Introduction

The impending global economic and trade unification of the 1990s highlights the need for the harmonization of accounting standards, including the disclosure of international financial activities of multi-national corporations (MCs) by their geographic areas of operation. Some domestic and international standard-setting organizations have established their own sets of rules and guidelines requiring geographic segment disclosures. These rule makers realize the increasing importance of international investment and the positive contributions of the information reported for various geographic areas to investors and creditors. Further, many international regulatory organizations have acknowledged the need for disclosure due to the significant role MCs play in influencing social and economic decisions of sovereign governments (United Nations, 1977).

The guidelines developed by the state-sponsored international standard-setting organizations, such as the United Nations (UN), Organization for Economic

Cooperation and Development (OECD), and European Economic Community (EEG), urge business enterprises of all constituent countries to report both financial and non-financial information of their foreign activities. While there has been, in part, an effort to harmonize the reports of the MCs based in various parts of the world, only a degree of sub-harmonization has been achieved at best. At the international level, considerable diversity exists concerning not only the procedures followed but also the type of information required. Although similarities in the reporting requirements are numerous, noticeable differences are also present.

In recognition of this problem this paper examines the reporting requirements of the standard-setting organizations as they pertain to geographic areas of operations. Each of the organizations, whether governmental or non-governmental, with its own institutional setting has made tremendous efforts to establish accounting standards for geographic segment reporting. These major efforts are briefly reviewed and the disclosure requirements of the various standard-setting bodies are compared. An understanding of the differences and similarities in corporate reporting standards, we believe, can contribute to harmonization and to the evolving international framework for accounting and reporting.

Efforts of the US Securities and Exchange Commission

In September 1968 the Securities and Exchange Commission (SEC) announced proposals to amend forms S-1, S-7, and 10K, to provide for greater disclosure of the contributions to sales and earnings totals by divisions of business enterprises. The SEC, in formulating these proposals, utilized the findings of studies sponsored by the Financial Executives Research Foundation, the National Association of Accountants, and the recommendations of other organizations and individuals (Mautz, 1968; Backer and McFarland, 1968). Senator Gaylord Nelson, in his letter to the Chairman of the SEC, expressed his concern by saying that "generally, in my judgement, the direction of our public policy should be toward an even more open society, with the widest possible availability and dispersion of scientific, industrial and economic information" (*Cong. Rec.*, 1969, p. 20105). He later called the SEC proposed amendments "an important step forward bridging an 'information gap' that has long troubled the investment community" (*Cong. Rec.*, 1969, p. 20103).

According to the SEC proposals, the registrant corporations were required to report (in itemized form), among other things, the amount of sales, earnings, and assets employed in the foreign subsidiaries.

Where ten percent or more of total sales and revenues or net income ... are derived from operations outside the United States and Canada or from Government procurement or any single customer, operating and financial information with respect to each such source shall be set forth and for any categories of products or services within each source which contributed ten percent of the total company sales and revenues or net income as stated above (*Cong. Rec.*, 1969, p. 20106).

Soon after these proposals were released, many organizations and individuals in the business community sent their comments to the offices of the SEC. Some of these comments contained denunciations while others made recommendations.

The proposed 10 percent criterion was the subject of criticism which created the greatest number of comments. For example, many members of the Accounting Principles Board (APB) believed that a 10 percent criterion was so low that reported data would be excessively fragmented ("News Report," 1968). Some others argued that while the 10 percent rule could possibly produce detailed reporting information in the case of the smaller firms (those with annual sales of less than \$1 million), this still could allow a great deal of information to remain concealed for larger corporations. Perhaps the strongest comment was made by J.D. Terrell Couch, General Counsel for Marathon Oil Company, stating that "the effect of the proposed amendments is to force financial reporting beyond the pale of accepted accounting principles" (*Cong. Rec.*, 1969, p. 20111).

A number of registrant companies commented on possible competitive damages to a reporting company as a result of the proposed disclosures. Once a high rate of profitability and opportunity for growth is reported for a newly discovered area of business, this could bring undesirable competition to the area. With this in mind, the incentives to innovate and, consequently, the willingness to invest in research and development activities could be reduced. Following this competitive argument, Charles W. Stewart, President of the Machinery and Allied Products Institute, stated that the proposed disclosure would provide "priceless signals to existing or would-be conglomerates to deploy their financial resources in those areas where the registration statements of competitors suggest that better-than-average profits are to be made (*Cong. Rec.*, 1969, p. 20111).

Multi-national enterprises operate in areas with varying rates of profitability, degrees of risk, and opportunities for growth. The rate of profitability of foreign operations, much as that of domestic operations, fluctuates over time for a variety of reasons. If the operating results of one period in a foreign area decreases as compared to other areas or periods, a sense of panic may begin among the stockholders, with devastating consequences. Management's disclosure of areas of low profitability, some argued, can cause unwarranted proprietary problems for the corporation (*Cong. Rec.*, 1969).

Some complained of the lack of provisions for defining the qualities which can differentiate one division of an enterprise from others. The APB members, in their letter, commented that it is not clear "as to what constitutes outside operations, sharing with US operations of costs such as research and development, and differing tax treatments among countries" ("News Report," 1968, p. 14).

In a later revision of the proposed amendments to forms S-1, S-7, and 10K, the SEC transferred some of these determinations to management by recognizing that:

Management, because of its familiarity with company structure, is in the most informed position to separate the company into components on a reasonable basis for reporting purposes. Accordingly, discretion is left to the management to devise a reporting pattern appropriate to the particular companies' operations and responsive to its organizational concepts (*Cong. Rec.*, 1969, p. 20109).

Due to the diversity of practices in the allocation of common costs among divisions of business enterprises and intra-company pricing policies, the reported operating results can be of limited value. This problem was specifically noted since the proposed amendments had left the choice of the accounting method to the reporting entity. The comments of the Machinery and Allied Products Institute indicated that with

the alternative generally accepted methods of allocating common costs between the reporting divisions "even the most sophisticated investor would be unable to compare directly the operating results of quite different companies" (*Cong. Rec.*, 1969, p. 20111).

Moreover, cost allocation methods change over time with changes in corporate organization and product development so that year-to-year comparisons of figures within the same company are not altogether meaningful without providing a technical explanation that is unlikely to be helpful to the average investor (*Cong. Rec.*, 1969, p. 20111).

Finally, the current accounting systems of the registrant companies have been designed to respond to present reporting requirements. With the new amendments, changes to the accounting information system and additional accounting personnel would be required in order to provide the required segment information. Furthermore, independent auditors may increase their fees in the future if they must examine and verify additional reports. Understandably, increased cost was a cause of disenchantment with the new proposals as some firms claimed the increased disclosure would require complicated, time-consuming bookkeeping for no legitimate purpose (Nugent, 1969).

The SEC, after considering the above comments and concerns, issued a revision of the proposed amendments subject to further comments. On July 14, 1969, a final version of the disclosure requirements was adopted and became effective on August 14, 1969 (*Cong. Rec.*, 1969).

The final requirements did not include the itemized disclosure of foreign operations proposed by the original draft. In fact, the new amendments generally reiterated the recommendations made in Chapter 12 of ARB 43 by stating:

If the registrant and its subsidiaries engage in material operations outside the United States, or if a material portion of sales or revenue is derived from customers outside the United States, appropriate disclosure shall be made with respect to the importance of that part of the business of the registrant and the risks attendant thereto. Insofar as practicable, furnish information with respect to volume and relative profitability of such business. (*Cong. Rec.*, 1969, p. 20110)

In December 1977 the SEC adopted Regulation S-K, which modified the SEC's prior segment reporting requirements by bringing them more in harmony with the Financial Accounting Standards Board (FASB) Statement No. 14, which was issued in 1976. The FASB Statement established the 10 percent criterion for reportable geographic segments and required the disclosure of revenue, operating profits or losses, and identifiable assets for these segments. In addition to information required by the FASB, Regulation S-K requires the disclosure of financial information of geographic areas that are not presently significant but were significant in the past and are expected to become significant in the future.

Efforts of the United Nations

MCs play a significant role in world economy and trade. Their contribution to the social and economic welfare, particularly in developing and underdeveloped countries, is of vital importance. In addition, they are of such size that their activities can influence, at least indirectly, political movements in host countries.

Because of the importance of MCs in the development of the world economy and the increasing rate of expansion in their activities, in 1972 the UN Secretary-General appointed the Group of Eminent Persons (the Group) to study the impact of MCs on economic development and international relations (United Nations, 1977). Based on the recommendations of the Group, in 1974 the UN Economic and Social Council created the Commission on Transnational Corporations (UNCTC).

The UNCTC's objectives included a wide range of issues relating to MCs. One of these issues was the development of a code of conduct that could be used to judge the behavior of MCs. The outline developed for such conduct included subject matters, such as relationships with host governments, corrupt practices, transfer pricing, taxation, restrictive business practices, transfer of technology, employment and labor, consumer and environmental protection, and disclosure of information (Fitzgerald and Kelly, 1978).

To achieve its objectives, the UNCTC in 1976 organized an Expert Group on International Standards of Accounting and Reporting (the Group of Experts). The Group of Experts was charged

- (1) To review the existing reporting practices by transnational corporations and reporting requirements in different countries.
- (2) To identify gaps in information in existing corporate reporting and to examine the feasibility of various proposals for improved reporting.
- (3) To recommend a list of minimum items, together with their definitions, that should be included in reports by transnational corporations and their affiliates, considering the recommendations of various groups concerned with the subject matter (United Nations, 1977, p. 17).

The recommendations of the Group of Experts included the disclosure of such information as:

- (1) Consolidated financial statements of a group of related companies.
- (2) Separate financial statements of the parent and subsidiary companies. The subsidiary financial statements would be reported in the language, currency, and in conformity with the accounting principles of the host company.
- (3) Certain information concerning operations in various geographic areas. The term "geographic area" was defined to refer to a group of countries or an individual country as each enterprise finds it appropriate in its particular circumstances.

The following items were proposed to be reported, as a minimum, for each geographic area of operations:

- (1) Revenues from unaffiliated customers.
- (2) Transfers to other geographic areas.
- (3) Operating profit or net income.
- (4) Total assets or net assets or total assets and total liabilities.
- (5) The amount of property, plant and equipment before depreciation.
- (6) Accumulated depreciation.
- (7) Other long-term assets.

- (8) New investment in property, plant, and equipment.
- (9) Description of principal activities in each geographic area.
- (10) Exposure to exceptional risks of operating in the area.
- (11) The basis of accounting for transfers between areas (United Nations, 1977).

In addition to financial information, the Group of Experts proposed that MCs disclose certain non-financial data. These reporting items included information concerning labor and employment, production, projected investment programs, organizational structure, and environmental measures.

These proposed reporting standards while indicated as "the minimum items" are much more comprehensive than the requirements of FASB Statement No. 14. It is not clear whether the reporting items exceed present reporting requirements of other countries; however, it is reasonable to believe that the UN standards have widened the scope of disclosure in most constituent member countries of the UN. Perhaps "the greatest potential impact of the proposals on US companies lies in exposure to sharply increased foreign reporting requirements and to public reporting on individual domestic affiliates" (Fitzgerald and Kelly, 1978, p. 9).

Efforts of the Organization for Economic Cooperation and Development

The (OECD) is an outgrowth of the Organization for European Economic Cooperation (OEEC) organized in 1948 under the Marshall Plan (Deloitte Haskins and Sells, 1981). The OECD is an inter-government agency which was formed under a convention signed in December 1960 in Paris and includes 24 members which are located primarily in Western Europe, but also includes the Commonwealth countries, Japan, and the United States.

The OECD was established to achieve broad sets of objectives, such as:

- (1) Development of the world economy through:
 - (a) improvement of economic growth to the highest achievable level;
 - (b) increasing the level of employment;
 - (c) raising the standard of living in the member countries.
- (2) Expansion of multi-lateral world trade between member and non-member countries in accordance with a non-discriminatory set of criteria.

In January 1975, the OECD established a Committee on International Investment and Multi-national Enterprises (the Committee). As with the UN Commission on Transnational Corporations, the Committee's objectives included the standardization of accounting practices in member countries. To achieve this objective, the Committee published the *Guidelines for Multinational Enterprises* in June 1976.

The *Guidelines* are only recommendations of the Committee to multi-national enterprises operating in member countries and are not legally enforceable. Among the standards for the activities of multi-national enterprises are general policies, disclosure of information, competition, financing, taxation, employment and industrial

relations, and science and technology (Camps, 1975). Compliance with the *Guidelines* was soon seen to be realized if two basic issues were addressed: (1) problems of the misinterpretation of accounting terms can be solved by providing explanation to assist enterprises with their use; and (2) Lack of harmonization of accounting disclosure requirements (Geiger, 1986).

To examine these problems, the Committee established an ad hoc Group on Accounting Standards in 1978. This group, after reviewing the national and international efforts in developing accounting standards and their attempts towards harmonization of these standards, concluded that existing arrangements were less than satisfactory (Gelger, 1986). These findings contributed to the formation of a Working Group in October 1979 to promote efforts towards resolving the issues raised earlier. The Working Group directed its efforts initially to the first part of the problem, which resulted in a publication in 1983 providing explanations and clarifications of disclosure requirements in the OECD *Guidelines* (Geiger, 1986).

To achieve its second mandate, which was to improve the quality and comparability of accounting information, the Working Group created a number of technical subgroups. These subgroups have been charged to examine all approaches towards harmonization and report them with their underlying reasoning to the Working Group. While progress has been made in this regard, much more remains to be done.

The *Guidelines* for disclosure of information indicate specifically the types of information expected to be reported by multi-national enterprises. Included in the reporting information (which should be published at least annually) are:

- (1) Name and description of geographic areas of operations and principal activities.
- (2) Sales or revenue by geographic area.
- (3) Operating results by geographic area.
- (4) Amount of new capital investments by geographic area of distribution.
- (5) The average number of employees in each geographic segment over the reporting period.
- (6) The pricing policies for inter-segment transfers.

Efforts of the European Economic Community (The Common Market)

The EEC was established by the Treaty of Rome on March 25, 1957 (Kerr, 1977). The EEC is believed to be the most highly developed and most significant economic and political organization in existence (Taylor, 1979). The importance of the EEC was enhanced in 1969 when the European Coal and Steel Community and the European Atomic Energy Community were merged with the EEC. A Council of Ministers (the Council) has been formed to represent the governments of the member countries to establish economic policies and other responsibilities incorporated in inter-governmental treaties. Unlike the OECD, the EEC does have supranational regulatory power. Any rules and standards established by the Council which involve not only governments but private corporations and business can be legally enforced.

The Council is a decision-making assembly charged with investigating a wide variety of proposals and issues. The various issues that could be delineated by the Council included the harmonization of standards of accounting and disclosure of information in the 12 member countries.

Several Directives have been approved by the Council and a number of proposals for Directives are pending their approval. Among the approved Directives, only one (the Fourth Directive) deals with segment disclosure and accounting practices of companies subject to the jurisdiction of the member countries (Deloitte Haskins and Sells, 1981).

The Fourth Directive was published in 1978 and includes such areas as format of the financial statements, disclosure requirements, valuation rules, notes to financial statements, and the need for audited financial statements. The only reference to the disclosure of foreign activities appears in Section 8, Article 43, concerning the notes to the financial statements. In this section MCs are asked to report their sales by the geographic area of operations.

Efforts of the International Accounting Standards Committee

In 1966 the leading professional accounting organizations in three countries – Canada, the United States, and the United Kingdom – established the Accountants' International Study Group (AISG). The AISG was charged with the task of instituting comparative studies of accounting theory and practice in participating countries (AISG, 1972). In 1973, the AISG with cooperation of the leading accounting bodies in six other countries established the International Accounting Standards Committee (IASC). Thereafter any additional members are granted associate memberships. The IASC is a voluntary, private organization, created to formulate international accounting standards. The members of the IASC have agreed to use their best efforts to ensure conformity with the statements of International Accounting Standards (IAS) issued by the IASC.

The first Statement of the IASC was issued in January 1975. To date 31 Statements have been issued and Exposure Drafts of a number of Statements are outstanding.

In March 1981 the IASC approved IAS 14, "Reporting Financial Information by Segment" (IASC, 1981). This statement calls for the disclosure of certain information by each geographic area of business operations, including:

- (1) A description of the composition of each reported geographical area.
- (2) Sales or other operating revenues, distinguishing between revenue derived from customers outside the enterprise and revenue derived from other segments.
- (3) Segment results.
- (4) Segment assets employed, expressed either in money amounts or as percentages of consolidated totals.

Furthermore, the reporting enterprise should provide the following additional information:

- (1) Reconciliations of the segment and aggregated information.
- (2) Explanation of the nature, reasons, and the effect of any material changes in the identification of segments and in accounting practices used in reporting segment information.

The statement also notes that other useful financial information and non-financial information, such as number of employees for each reported segment, may also be disclosed.

The above requirements apply to enterprises whose securities are publicly traded and other firms which are economically significant. The extended disclosure is intended to enable users of financial statements to assess the effect that operations in different industries and in different geographic areas may have on the enterprise as a whole (IASC, 1981).

Comparison of Standards

The membership countries of the OECD, EEC and IASC are listed in Table 1. All of the international standard-setting organizations agree that the delineation of geographic segments is to be determined by the enterprise, as appropriate to its particular circumstances. The UNCTC, IASC, and OECD refer to individual countries or groups of countries as possible geographic segments.

Table 1. Member Countries of International Organizations

OECD	EEC	IASC
Australia	Belgium	Australia
Austria	Denmark	Canada
Belgium	France	France
Canada	West Germany	Germany
Denmark	Greece	Japan
Finland	Ireland	Mexico
France	Italy	Netherlands
West Germany	Luxembourg	Nigeria
Greece	Netherlands	South Africa
Iceland	Portugal	UK and Ireland
Ireland	Spain	USA
Italy	UK	
Japan		
Luxembourg		
Netherlands		
New Zealand		
Norway		
Portugal		
Spain		
Sweden		
Switzerland		
Turkey		
UK		
USA		

The OECD notes:

While no single method of grouping is appropriate for all enterprises, or for all purposes, the factors to be considered by an enterprise would include the significance of operations carried out in individual countries or areas as well as the effects on its competitiveness, geographic proximity, economic affinity, similarities in business environments and the nature scale and degree of interrelationship of the enterprises' operations in the various countries. (United Nations, 1977, p. 73)

In its Fourth Council Directive the EEC only specifies the segmentation into "geographical markets in so far as, taking account of the manner in which the sale of products and the provision of services falling within the company's ordinary activities are organized, these ... markets differ substantially from one another" (EEC, 1978, No. L222/26). This allows wide latitude for the MCs in defining their geographic segments.

The FASB has restricted this latitude for US-based MCs by defining a reportable geographic segment as one representing 10 percent or more of total revenues or of total assets. The SEC accepted these criteria, but also specified the inclusion of segments significant in the past and expected to become significant in the future. Of the international organizations, only the IASC has considered a similar materiality criterion, and it was not adopted as a requirement.

Some consider it appropriate to provide guidelines on

how material a segment should be before it is reported separately and to limit the segments to a reasonable number so as to avoid unnecessary complexity. Such guidelines may be 10 percent of consolidated revenue, or operating profit or total assets, although such quantitative guidelines are not the sole factors in identifying segments for reporting (IASC, 1981, para. 14).

The definition of a significant geographic segment is one item needing further standardization, as the scope of international operations and the interest in international investment increases.

The items of disclosures also vary greatly among the standard-setting organizations, as illustrated in Table 2. The EEC specifies disclosure of only sales, while the UNCTC suggests a long list of disclosures not included by the other organizations. All except the EEC include the disclosure of operating results by segment and some information regarding assets: total assets (UNCTC and IASC), new capital investment (UNCTC, OECD, and IASC) and other detailed asset information (UNCTC). The OECD and UNCTC specify disclosure of inter-segment pricing information, and the UNCTC also suggests disclosure of segment exposure to exceptional risk. Regarding

Table 2. Comparison of Geographic Segment Disclosures Specified by International Organizations

	UNCTC	OECD	EEC	IASC
Sales	X	X	X	X
Operating results	X	X		X
Assets	X			X
New capital investment	X	X		
Detailed asset information	X			
Inter-segment pricing	X	X		
Exposure to exceptional risk	X			
Employment information	X	X		X
Other non-financial information	X			

non-financial data, the OECD and IASC mention only average number of employees, while the UNCTC includes production, projected investment programs, organizational structure and environmental measures, and employment data.

Conclusions and Recommendations

There is considerable diversity of practices and disclosure requirements for geographic segment reporting among the international standard-setting organizations. This diversity is noticeable not only in the segment identification procedures, but also in the list of information to be reported. Each of the organizations described in this paper has developed its own version of geographic segment reporting standards seemingly with little regard for harmonization.

In a world where investment recognizes no national boundaries and with the increasing internationalization of business, diversity in financial reporting has serious consequences. Comparison of financial information disclosed by MCs based in different countries is distorted by the use of different concepts and procedures promulgated by the various standard-setting organizations. With this lack of international comparability, the result can be less access to foreign capital markets and a reduction in international business. Harmonization of accounting standards between all reporting components of enterprises not only improves comparability, it can also provide better communication, lower costs, and contribute to more efficient management.

While progress has certainly been made to achieve harmonization, much more remains to be done to establish an international framework for accounting and reporting. In the area of geographic segment reporting, efforts must be made to harmonize segment identification standards. In addition, the standardization of geographic segment information to be reported is of vital importance. Although the extensive disclosures recommended by the UNCTC may provide valuable information to current and potential investors and creditors, it may be more realistic to expect initial standardization such as the more restricted disclosures specified by the OECD or IASC. Once general acceptance of limited information disclosure is attained, the list can gradually be expanded to encompass more of the UNCTC's suggested comprehensive disclosures.

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Taiwan's Accounting Profession: A Response to National Economic Growth

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Key words: Taiwan; National Accounting Structure; CPA Regulation; CPA Practice

Abstract: *Taiwan underwent rapid economic development in the 1980s. The economic development was accompanied by a significant internationalization of Taiwan's economy. The economic expansion and internationalization have necessitated many changes in Taiwan's accounting profession. The National Federation of CPA Associations was reorganized in 1982; the Accounting Research and Development Foundation was established in 1984. This article is designed to provide a basic knowledge of Taiwan's accounting profession. It describes the nature, responsibilities and organizational structure of the Federation. In addition, it explains how Taiwan has sought to solve its accounting standard-setting problems by establishing the Foundation and compares Taiwan's accounting development with that of the United States.*

Taiwan, whose official name is the Republic of China (ROC), experienced rapid economic development in the 1980s.¹ Its economic growth rate was estimated to be 7.32 percent in 1989.² Its per capita national income increased from \$3500 in 1986 to \$6613 in 1989.³ Taiwan's foreign exchange reserves are now approximately \$75 billion, the second largest in the world.⁴ It also became the twelfth largest trading nation in 1989.⁵

The speedy economic development in Taiwan fostered the healthy growth of the Taiwan Stock Exchange. The number of corporations with stocks listed on it increased from 127 in 1985 to 166 in July 1989.⁶ Nineteen state-owned enterprises have planned to list their stocks in the near future.⁷ In terms of trading value, the Taiwan Stock Exchange was the third largest in the first half of 1989, only behind the Tokyo Stock Exchange and the New York Stock Exchange.⁸ The population of Taiwan now totals 20 million, but more than 4 million people had opened accounts with stockbrokers to engage in trading by the end of 1989.⁹ Consequently, the reliability and relevance of the financial statements of the listed corporations are of great concern to a significant proportion of its population.

Foreign investors too have good reasons to be concerned with the quality of these financial statements. Four Chinese investment trust companies have issued beneficial certificates in foreign countries for raising funds to engage in buying and selling stocks in Taiwan. Of the four, the ROC Taiwan Fund, issued by International Investment Trust Ltd., and the Taiwan Fund, issued by China Securities Investment Trust Corporation, are listed on the New York Stock Exchange. Taiwan has openly stated that foreign institutional and individual investors will eventually be allowed to trade local stocks on the Taiwan Stock Exchange.¹⁰ The number of foreign enterprises that own stocks listed on the Taiwan Stock Exchange through technical cooperation or other arrangements with local corporations is on the increase.¹¹ Perhaps to satisfy the demand of some foreign readers, Taiwan Cement Corporation, the largest one in Taiwan's cement industry, has seen fit to prepare its annual report in both Chinese and English.

National accounting professions must meet the challenges and needs of the economy in which they function. Taiwan's economy has recently undergone significant expansion, internationalization and liberalization. Therefore, an analysis of the accounting profession of Taiwan is both proper and timely. This analysis focuses on the National Federation of CPA Associations (NFCPAA) and the Accounting Research and Development Foundation (ARDF) and their responses to national economic and financial needs.

The National Federation of CPA Associations of the Republic of China

Section 28 of the national CPA Law provides that the NFCPAA be organized at the site of the central government by provincial or municipal CPA associations that are composed of individual CPAs.¹² In 1946, CPA associations from 18 provinces and special municipalities on the Chinese mainland founded the NFCPAA in the capital city of Nanking.¹³ After the Nationalist government moved to Taiwan in 1949, the NFCPAA began operations there. The CPA Associations of Taiwan Province, Taipei Special Municipality and Kaohsiung Special Municipality were invited to appoint representatives to join the NFCPAA in 1982.¹⁴ As an organization handling CPA affairs, it is under the supervision of the Ministry of Finance responsible for issuing the CPA certificates; as a social organization, it is under the supervision of the Ministry of Interior responsible for social affairs. Four aspects of the NFCPAA will be discussed: its distinguishing characteristics, its committees, its association members, and the members of its association members'.

Distinguishing Characteristics of the NFCPAA

Provincial and municipal CPA associations (rather than individual members) comprise the membership of the NFCPAA, and representatives of these associations constitute the General Meeting.¹⁵ The General Meeting elects the Board of Directors, which in turn chooses a President.¹⁶ The Board of Directors also appoints a Secretary-General

to assist the President in handling the daily administrative affairs of the NFCPAA. Provincial and municipal CPA associations have the power to issue disciplinary sanctions of the CPAs, but the final decision rests with the Ministry of Finance.¹⁷

The NFCPAA has not been responsible for setting financial accounting and auditing standards since the formation of the Accounting Research and Development Foundation in 1984. Prior to that, the NFCPAA had a Financial Accounting Committee that issued five statements concerning financial accounting standards from 1982 to 1984 and an Auditing Standard Committee that issued four statements concerning auditing standards during the same period. However, these two committees were terminated in 1984 when their responsibilities were transferred to the Foundation.

Internally the NFCPAA promotes and protects the general welfare of Taiwan's accounting profession by serving as its spokesman, for it is the sole national professional accounting organization. For example, the Legislative Yuan, the highest legislative organ, is currently deliberating on revision of certain sections of the CPA Law proposed by the Ministry of Finance. The NFCPAA has suggested some revised sections of its own, which are different from those of the Ministry of Finance.¹⁸ A monthly entitled *CPA News* has been published by the NFCPAA since June 30, 1981. This monthly is designed to inform readers of the wide-ranging activities of the NFCPAA and is the best source of information concerning it. On June 30, 1989, the NFCPAA sponsored events to mark the 32nd Accountants' Day.

In the international arena, the NFCPAA represents Taiwan's accounting profession by participating in international organizations, attending international meetings, and arranging visits between Taiwan's accounting profession and accounting professions in other countries. It is a founding member of the Confederation of Asian and Pacific Accountants (CAPA) and the International Federation of Accountants (IFAC). It has been a member of the International Accounting Standards Committee (IASC) since 1983.¹⁹ It was represented at the twelfth conference of the CAPA held in Seoul, Korea on September 17, 1989.²⁰ Although not a member of the ASEAN (Association of Southeast Asian Nations) Federation of Accountants, it plans to participate in the Federation's sixth conference to be held in Manila, the Philippines on November 28, 1989.²¹

The NFCPAA assumes heavy responsibilities at home and abroad. However, its committees actually discharge these responsibilities.

The Committees of the NFCPAA

The NFCPAA has nine committees. Their functions are described below.

Accounting and Auditing Standard Consultation Committee.

This committee was established by the NFCPAA in 1984 when its Financial Accounting Committee and Auditing Standard Committee were dissolved.²² It collects data on accounting and auditing problems and studies these problems. It can also furnish advice and opinions on matters concerning accounting and auditing standards.

Business Service Committee.

This committee was placed under the jurisdiction of the NFCPAA in 1983. It analyzes ways of improving the financial accounting environment, ameliorating accounting systems used by business enterprises, and computerizing accounting systems. It also reviews the procedures for registration of businesses with a view to bettering these procedures.²³

Compilation and Publication Committee.

Formed in 1981, this committee is responsible for compiling and publishing *CPA News*. It also compiles and translates publications concerning accounting, financial management, and relevant laws and regulations.²⁴

International Affairs Subcommittee.

This subcommittee handles correspondence with foreign organizations. It facilitates and assists in the international exchange activities.²⁵

Operation Assessment Committee.

This committee assesses the responsibilities of CPAs for issuing opinions on financial statements. It also conducts research to improve auditing.²⁶

Professional Education Committee.

This committee makes arrangements for CPAs to engage in advanced studies and for CPAs' assistants to undergo further training. At the request of business enterprises and other organizations, it may train their accountants and auditors.²⁷

Professional Ethics Committee.

Reorganized in 1982, this committee prepares statements on professional ethics and researches methods to enhance ethics and moral behavior of accountants. It has issued six statements on professional ethics since 1983. They include: "Norm of Professional Ethics of the Certified Public Accountants of the Republic of China;" "Sincerity, Fairness, and Independence;" "Advertisement, Publicity, and Business Development;" "Professional Knowledge and Technologies;" "Confidentiality;" and "Cases of CPA Certification as Transferred from Other Accountants."²⁸

Public Relations Committee.

Established in 1983, this committee safeguards the rights and the image of CPAs. It publicizes the business of accountants so the general public will have an understanding of the profession. It is charged with initiating and maintaining contacts with influential people at home or abroad.²⁹

Taxation Committee

This committee was established in 1981 to study taxation systems and related laws and regulations. It is charged with studying ways of improving the performance of CPAs while serving as tax agents as well.³⁰

In discharging their numerous responsibilities, the committees requires association members of the NFCPAA to provide CPAs to chair and work as members of these committees. An analysis of these association members follows.

Members of the NFCPAA

After Taiwan was returned to the Republic of China following the Japanese defeat at the end of the Second World War, the certified public accountant system was established. The Taiwan Provincial CPA Association was established on May 14, 1950.³¹ Taipei city was elevated from a provincial city to a special municipality on July 1, 1967; the Taipei Municipal CPA Association was formed on September 16 of the same year.³² Finally, the Kaohsiung Municipal CPA Association was established on September 25, 1979, because Kaohsiung city had also become a special municipality on July 1, 1979.³³ On January 20, 1982, the three CPA associations joined the NFCPAA at its invitation.³⁴ They are current members of the NFCPAA.

Under Sections 32 and 33 of the CPA Law, the provincial or municipal CPA association should hold the members' general meeting regularly and create a board of directors headed by a chairman.³⁵ Although cooperating closely with the NPCPAA, the three CPA associations are capable of making and voicing independent judgments in certain areas. For example, according to Section 34 of the CPA Law, each of the three associations is supposed to form a disciplinary committee to maintain discipline among its members.³⁶ The Taipei Municipal CPA Association has formed a team to study and modify the outdated business laws. The result of the study will be submitted to authorities concerned.³⁷

In accordance with Sections 9 and 11 of the CPA Law, a CPA with two years of practical accounting experience in an accounting firm or in a governmental or private organization can register with a provincial or municipal department of finance, which should keep a register of CPAs.³⁸ After registering CPAs, the provincial or municipal department of finance should report to the Ministry of Finance. Under Section 27 of the same law, such a registered CPA should join a CPA association before practicing; the CPA association should not deny admission to him or her.³⁹ At the present time, the Taiwan Provincial CPA Association has 684 members, the Taipei Municipal CPA Association has 658 members, and the Kaohsiung Municipal CPA Association has 110 members.⁴⁰

Members of the CPA Associations

These CPAs form the foundation of the three CPA associations in Taiwan, so an investigation into their qualifications and their accounting firms is needed.

Qualifications of CPAs.

It has been stipulated by Section 1 of the CPA Law that a Chinese citizen who has passed the CPA examination and received a CPA certificate can serve as a CPA.⁴¹ The Ministry of Examination holds the CPA examination once a year. Section 5 of the CPA Law requires a person to apply to the Ministry of Finance for a CPA certificate.⁴²

A participant in the CPA examination often has a bachelor degree in accounting or a related field from a local or foreign university or college recognized by the Ministry of Education.⁴³ Those without degrees are given an opportunity to take the CPA examination if they have passed certain low-level examinations for accountants and have four years' working experience in the accounting field.⁴⁴ Chinese constitutional law, Chinese, advanced accounting, analysis of financial statements, auditing, management accounting, accounting system, corporate law, law of negotiable instruments, and tax law (including income tax law, corporate tax law, and land tax law) are subjects covered by the examination.⁴⁵

A Chinese citizen with one of the following qualifications may take a simplified examination in order to qualify as a CPA: (a) hold a bachelor of accounting or related degree from a local or foreign university or college recognized by the Ministry of Education and have served as an accountant or auditor with a specified minimum rank within the government or armed forces for at least three years; (b) hold a bachelor of accounting or related degree from a local or foreign university or college recognized by the Ministry of Education and have served as at least an instructor for a minimum of three years or as a professor for a minimum of two years at an university or college; and (c) have a foreign CPA certificate which has been recognized by the Ministry of Examination.⁴⁶ These simplified examinations are held by the Ministry of Examination twice a year. A person with the qualification specified in (c) is to be tested on corporate law and tax law only.⁴⁷ In 1988 three people passed the simplified examination described by (c).⁴⁸ Generally people who are more academically qualified or higher in rank will be tested on fewer subjects.

Forty-nine people passed the regular CPA examination in 1984, 71 in 1985, 85 in 1986, 66 in 1987, and 220 in 1988; the number of people who passed the simplified CPA examination was 46 in 1984, 49 in 1985, 34 in 1986, 17 in 1987, and 10 in 1988.⁴⁹ An increasing number of people are passing the regular CPA examination whereas a decreasing number are passing the simplified examination. Despite this fact, the fairness of the simplified examination has occasionally been questioned by some people who maintain that it should be abolished.⁵⁰ However, the tradition of the simplified examination is deeply rooted, so it is not likely to disappear soon.

Accounting Firms

The rapid economic growth and the steady increase in the number of corporations listed on the Taiwan Stock Exchange have given rise to an increasing demand for CPAs. The annual income of accountants compared favorably with the annual incomes of such other professional groups as lawyers, doctors and architects in the 1980s.⁵¹ The CPAs have organized themselves into either single proprietorships or partnerships

to practice. Corporate accounting firms have yet to be established. However, because corporate accounting firms can enjoy a legal entity of their own, the advantages of forming such firms have begun to be appreciated and advocated by some.⁵²

All the practicing CPAs who work for accounting firms in Taiwan are Chinese. Under Section 47 of the CPA Law, if the law of a foreign country allows a Chinese citizen to practice as an accountant, then a citizen of that country can practice in Taiwan if he has passed the CPA examination in Taiwan and gained approval of the Ministry of Finance.⁵³ No foreigners have taken advantage of this section to become CPAs in Taiwan. However, the Big Eight firms have all established cooperative relations with local accounting firms for engaging in auditing.

Accounting firms in Taiwan have grown in size. Mergers by local accounting firms have contributed to this growth. But business combinations among foreign accounting firms seem to exert influence too. Because Deloitte Haskins & Sells and Touche Ross & Co. have decided to merge, their associated firms, Der Ching & Co. and Chiang, Lai, Lin, Tu, Chang & Wu, have started exploring the possibility of doing the same. If their attempt proves successful, the new firm will have 30 partners and more than 500 employees.⁵⁴ A proposed combination between Arthur Andersen & Co. and Price Waterhouse & Co. is likely to prompt their respective associated firms, T.N. Soong Co., CPAs and Chen, Chu & Co., to follow suit.⁵⁵

Practicing CPAs need to be conversant with generally accepted accounting and auditing standards. These standards are formulated by the Accounting Research and Development Foundation of the Republic of China.

The Accounting Research and Development Foundation (ARDF) of the Republic of China

The ARDF is an endowed institution. It has been publicly acknowledged that the experience of the Financial Accounting Foundation (FAF) in the United States contributed to the April 4, 1984 establishment of this institution.⁵⁶ The ARDF is primarily supervised by the Ministry of Finance. Its objectives are to upgrade the level of accounting study, to advance continued development of accounting and auditing standards, and to help industrial and commercial enterprises improve their accounting systems.⁵⁷ Several organs of the ARDF help implement these objectives.

The Board of Directors of the ARDF

The members of the first Board of Directors were chosen by the initial contributors to the ARDF, and served for three years. Afterwards the members of the following Board of Directors were chosen by the preceding Board of Directors, the procedure followed from then on. This board is responsible for raising, controlling, and using funds of the ARDF as well as directing its activities.⁵⁸

The Board of Directors has 27 Directors at the present time, including its Chairman, a Vice Minister of Finance, and eight Managing Directors. One of the Managing Directors is the Chairman of the Securities and Exchange Commission (SEC), an agency within the Ministry of Finance which actually handles matters concerning

CPAs for the Ministry.⁵⁹ Prominent CPAs, accounting professors and other governmental officials also serve on the board. The board appoints a Secretary-General whose duty is to assist the board and its Chairman in handling daily administrative affairs. In addition, the Secretary-General is the publisher of a journal entitled *Accounting Research Monthly*. The main purpose of the monthly, founded in October 1985, is to enhance the quality of accounting research.

The Committees of the ARDF

There are four committees in the ARDP: the Financial Accounting Standards Committee (FASC), the Auditing Standards Committee (ASC), the Accounting System Committee, and the Education and Training Committee. These committees assume the following responsibilities.

The FASC

The FASC is currently charged with formulating financial accounting standards. The FASC has revised Statements 1, 2, 3, and 5 of the five statements issued by the Financial Accounting Committee of the NCPAA prior to its establishment in 1984. It has so far issued 10 statements of its own. The 15 statements are shown in Table 1.

For issuing a statement, the FASC complies with the following procedure: (1) identify a problem; (2) prepare an exposure draft; (3) solicit opinions from parties concerned and hold a public hearing if necessary; (4) revise the exposure draft; and (5) issue the statement.⁶⁰ The SEC has lent strong support to these statements by requiring all the companies with listed securities to follow the generally accepted accounting standards adopted by the FASC in case that no other laws and regulations offer any guidance.⁶¹ However, because Taiwan's economic condition is changing quickly, suggestions have recently been made that the FASC should revise outmoded parts in these statements rather than issue new ones.⁶² The FASC is similar to the

Table 1. Statements of Financial Accounting Standards

Date issued or revised	No.	Title
Oct. 1984	1	Compilation of Generally Accepted Accounting Principles
Oct. 1984	2	Accounting Standard for Leases
March 1985	3	Accounting Standard for Interest Capitalization
Sept. 1983	4	Statement of Changes in Financial Position
May 1985	5	Accounting Standard for Long-Term Investment
June 1985	6	Disclosure of Related Party Transactions
Dec. 1985	7	Consolidated Financial Statements
June 1986	8	Accounting Changes and Standard for Adjustment of the Profit or Loss of Prior Period
Sept. 1986	9	Standard for Contingencies and Post Balance Sheet Events
May 1987	10	Appraisal and Disclosure of Inventories
July 1987	11	Accounting Standard for Long-Term Construction Contracts
Dec. 1987	12	Standard for Offsetting Income Tax
June 1988	13	Standard for Troubled Debt Restructurings
Dec. 1988	14	Standard for Exchanging Foreign Currencies for Domestic Currency
May 1989	15	Disclosure of Accounting Policies

Financial Accounting Standards Board (FASB) in the United States in terms of functions. Its Chairman, Cheng Ting-won, has a Ph.D. degree in accounting from an American university.

The ASC

The ASC is charged with formulating auditing standards. The ASC has revised all the four statements issued by the Auditing Standards Committee of the NCPAA before its establishment in 1984. It has so far issued 13 statements of its own. The 17 statements are listed in Table 2.

The ASC, in issuing its statements, roughly follows the same procedure as that used by the FASB. The SEC has strongly supported these statements as well. Adherence to the generally accepted auditing standards adopted by the ASC in auditing the financial statements of the companies with listed securities is required of auditors unless provided otherwise by related law.⁶³

The Accounting System Committee.

Established in 1986, the Accounting System Committee is responsible for helping various enterprises in different industries develop sound accounting systems. It formulated and published standard accounting systems for the cement industry, the textile industry, and the chemical industry in May 1988. In these standard systems, it recommended the adoption of the calendar year as the fiscal year. It is now drafting such a system for the life insurance companies.⁶⁴

The Education and Training Committee.

Established in 1986, The Education and Training Committee is responsible for planning and organizing accounting education and training. It has sponsored seminars on

Table 2. Statements of Auditing Standards

Date issued or revised	No.	Title
Dec. 1985	1	Generally Accepted Auditing Standards
Aug. 1987	2	Standard for Audit Report
Dec. 1985	3	Standard for Working Papers
Dec. 1985	4	Auditing Evidence
Dec. 1985	5	Investigation and Appraisal of Internal Control
Aug. 1985	6	Investigation of Related Party Transactions
Sept. 1985	7	A Client's Written Representations
March 1986	8	Confirmation Request
April 1986	9	Observation of the Taking of the Physical Inventory
June 1986	10	Audit Program
Dec. 1986	11	Standard for Review of the Quarterly Financial Statements of the Companies Listed on the Taiwan Stock Exchange
Jan. 1987	12	Analytical Review
June. 1987	13	Review of Post Balance Sheet Events
Dec. 1987	14	Misconduct and Mistake
June 1988	15	Adoption of Other Auditors' Work
Aug. 1988	16	Evaluation of Going Concern
May 1989	17	Contacts between Successor Auditor and Predecessor Auditor

generally accepted accounting and auditing standards, held symposiums on current economic problems, and administered training programs for corporate financial and accounting managers.⁶⁵

The Center for Accounting Research of the ARDF

Established in 1985, this center is to serve as a channel of communication between the ARDF and those organizations and individuals concerned with the development of accounting and auditing. They are invited to become members of the Center by making cash contributions. In return, they receive free publications and free consulting service concerning accounting and auditing, among other privileges, from the ARDF. Currently, there are 157 organizational members and 362 individual members.⁶⁶ The organizational members include the Taiwan Stock Exchange, companies with listed stock, accounting firms, and some tax-collecting governmental agencies. The individual members include CPAs and accounting scholars.

Conclusion

In conclusion, it is appropriate to compare Taiwan's accounting profession with that of the United States. Many similarities exist. The FAF in the United States and Taiwan's ARDF are similar in that both are charged with supervising standard-setting boards or committees. The FASB in the United States and Taiwan's FASC both set great store by the due process in issuing standards. Just as the financial accounting standards formulated by the FASB are formally recognized by the American SEC as having substantial authoritative support, so are the financial accounting standards set by the FASC officially sanctioned by Taiwan's SEC. As for differences, the following are particularly worth noting.

The establishment of the NCPAA is mandated by the CPA Law of Taiwan, while the American Institute of Certified Public Accountants (AICPA) is a voluntary professional association. Members of the NCPAA are the three provincial and municipal CPA associations, but members of the AICPA are individual CPAs. Any CPA who wishes to practice in Taiwan must join one of the three CPA associations. In the United States, practicing CPAs are not required to be members of the AICPA or any of the state CPA societies. State societies, also voluntary professional associations, have no direct affiliation with the AICPA whereas the three CPA associations are part and parcel of the NCPAA.

The CPA Law of Taiwan is a legislation of the central government. The CPA examination is administered by the Ministry of Examination. The Ministry of Finance is responsible for issuing CPA certificates. In the United States, each state has enacted public accounting legislation. The CPA examination is given by each state but prepared and graded nationally by the AICPA. The Board of Accountancy of each state, empowered to administer state accounting law, issues CPA certificates.

The Ministry of Examination in Taiwan gives simplified CPA examination twice a year in addition to the regular CPA examination, which is held once a year. While

the merits and demerits of the simplified examination will continue to be debated, the existence of this type of examination does make it easier for civil servants, military officers, and academicians to become CPAs. No simplified CPA examination is available in the United States.

The ARDF, although established as a private foundation, has some governmental officials as members of its Board of Directors. Its FASC and ASC are charged with formulating financial accounting standards and auditing standards, respectively. However, there are no governmental officials directly connected with the FAF in the United States. The FASB and the Governmental Accounting Standards Board (GASB), overseen by the FAF, are responsible for issuing financial and governmental accounting standards, respectively. The formulation of auditing standards remains the task of the AICPA.

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Accounting Education in New Zealand

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Key words: Accounting education; New Zealand; USA; Accounting curricula; Faculty and student demand and supply

Abstract: *This paper analyses the development of accounting education in New Zealand with reference to its social and historical context. In particular, the way in which educational directions have been influenced by New Zealand's British heritage is discussed. In New Zealand accounting education started later and developed more slowly than in the United States. However, recent years have seen rapid increases in the numbers of accounting students and faculty. While there has been a shortage of accounting graduates in New Zealand, there are some signs that the supply crisis may be abating. There are undoubted similarities in the content of accounting education world-wide but the British influence has created a different syllabus in New Zealand from that which is typical in America. The difference in syllabus reflects the different approaches to the regulation of accounting between New Zealand and America. Accounting Education in New Zealand.*

Introduction

According to Peloubet (1966) modern accounting began with the development of the commercial republics of Italy during the fourteenth century. But despite these early beginnings, the teaching of accounting at university level has been a relatively recent phenomenon. It was not until the latter years of the nineteenth century that accounting faculties were appointed at educational institutions on both sides of the Atlantic. Similar developments in the southern hemisphere came some years later. In New Zealand accounting instruction began at the University of Otago in 1912 following receipt of a grant of £100 from the New Zealand Society of Accountants. Initially this instruction was given by a part-time faculty to part-time students. Full-time staff were appointed in 1960 and chairs in accounting were established in New Zealand in the early 1960s. Today, as the figures in Table 1 illustrate, the country

Table 1. Accountants per 1000 of population

Country	Number
Australia	4.6
Ireland	3.5
New Zealand	4.6
United Kingdom	3.1

Source: Estimated from private correspondence with the professional associations.

has a high concentration of accountants by comparison with other capitalist societies. New Zealand is perhaps fortunate in that it still has only one professional accounting body – fortunate because this facilitates interactions between the profession and educationists and in addition makes for relatively simple course accreditation procedures.

The purpose of this paper is to describe and analyze developments in accounting education in New Zealand since 1912 but with an emphasis on more recent changes. In the course of this analysis we will highlight the distinctive characteristics and differences of the New Zealand system. In the first section the social and historical context of accounting education will be discussed. The second section describes the structure of accounting education and this is followed by a section which discusses the content. The supply and demand for both accounting students and academic staff is then considered. The penultimate section describes continuing professional education in New Zealand and some conclusions are reached. The main focus of this paper is on the university education of accountants although other means of certification are briefly discussed.

Context

New Zealand is a small country of 3.3 million people dependent largely on agriculture for its wealth. Between 1840 and 1947 New Zealand was a British Colony, although it was not until as late as 1973 that remaining doubts of New Zealand's colonial status were removed (New Zealand Official Yearbook, 1985, p. 45). Even today the monarch is the British monarch¹ and appeals from the Court of Appeal in New Zealand are to the Privy Council in the United Kingdom. New Zealand's legal framework and professional arrangements have been strongly influenced by this history.

The legal framework that prevails in New Zealand has been profoundly influenced by that of Britain. For example, the regulation of companies is governed by the provisions of the Companies Act 1955, and this Act is largely derived from the British Act of 1948. The 1955 New Zealand Act contains provisions for the presentation of both the balance sheet and the profit and loss account along with the requirements for the appointment of auditors. These sections largely mirror those of the earlier British Act, including the very important provision that accounts be "true and fair" (Johnston et al., 1982, pp. 8–9).

The "true and fair" provision has a significant impact on educators as it requires the inclusion of a substantial amount of conceptual/judgmental material in financial accounting courses in addition to the usual procedural offerings. The British, of

course, on joining the European Economic Community are now moving away from this approach in financial reporting whereas New Zealand, for the moment, maintains the emphasis on the "true and fair" notion.

Similarly, the British influence with respect to the establishment and regulation of the professions is evident in New Zealand. For example, New Zealand doctors have long been members of the British Medical Association as well as of its local counterpart, the New Zealand Medical Association. Because of its small population there is little scope for a wide range of professional bodies catering for people working in industry and commerce. Consequently, the New Zealand Society of Accountants (NZSA) has long been the primary professional organization for those employed in commerce.

The NZSA was established in 1908 by an Act of Parliament and is now authorized under The New Zealand Society of Accountants Act of 1958. Because it is the main professional commercial body its membership reflects wider interests than are usually associated with professional accounting bodies. This diversity of membership in turn has influenced the direction of accounting education. For example, with 7 percent of the professional membership working in the public sector there has been a considerable demand for courses in public sector accounting. The employment type of members in the New Zealand Society of Accountants is shown in Table 2.

Members of the NZSA are the only people in law who are able to audit the financial accounts of companies and the NZSA also issues New Zealand's accounting standards. These standards have no legal standing but members are required to comply with them. This feature underlines the similarity to earlier British systems.

New Zealand has been undergoing a radical change in economic direction since the election in 1984 of a Labour government. The economy has swung from strict regulation to almost complete deregulation in four years (Carew, 1987). This change represents both a threat and an opportunity to the New Zealand accounting profession – threat in that services regarded as the preserve of the profession may now be offered by others; an opportunity in that a deregulated economy requires more sophisticated financial services.

As examples of the rapid changes in the business environment, New Zealand has moved from a situation of having no futures markets (except for wool) at the beginning of 1985 to having four futures markets in 1987. Also there has been a move from a completely regulated and restricted banking sector in 1984 to a deregulated market in 1986. The banking sector is now largely controlled by prudential supervision from the central banking authority, the Reserve Bank of New Zealand.

Table 2. The New Zealand Society of Accountants: Membership statistics

	Number	Percentage
Employees in industry and commerce	4 733	32
In public practice	4 109	27
Teachers and academics	200	1
Employees in the public sector	1 081	7
Retired and overseas members	5 066	33
Total	15 189	100

Source: New Zealand Society of Accountants (Submission, 1988).

In order to cater for the requirements of a diverse membership and an uncertain environment the key to accounting education is seen to be a continuous review of the "common core" syllabus which will represent between 50 and 60 percent of the previous professional examination syllabus.

Some of the present syllabus content may well be too detailed and too firmly rooted in present-day practical application to be appropriate for the flexible re-trainable accountant of tomorrow... As knowledge requirements are continually changing, and the pace of change is expected to increase, we suggest that a formal process of continuous syllabus review of the "common core" content should also be instituted (Horizon 2000, 1984, pp. 86-87).

The Structure of Accounting Education

At present there are two means to achieve membership of the NZSA. The first and most popular route is by gaining a university degree majoring in accounting. The second means is by taking the professional examinations set by the NZSA themselves; usually these are studied for at a polytechnic institution. This latter means has been declining in popularity to the extent that by 1983 77 percent of new members were graduates (Horizon 2000, 1984, p. 81).

In order to be eligible for university entry, New Zealand students must complete at least six years at primary school, two years at intermediate school and then at least four years at high school. Students who earn a sixth form certificate after four years of high schooling qualify for provisional entry to university. Students who complete an additional year at school in the seventh form are entitled to unprovisional entry to university. The Appendix contains data relating to the numbers of students at each level over the period 1975 to 1985. Although accounting is a popular subject at sixth and seventh form in many schools, the assumption in university first year courses is that students have had no prior exposure to accounting.

Professional Accreditation or Degrees

University degrees are monitored and accredited by the NZSA and at the present time all seven New Zealand universities offer accredited accounting degrees. Auckland, Canterbury, Lincoln College, Massey, and Otago offer three-year degrees and Victoria and Waikato offer four-year degrees. The degree is followed by a three-year practical experience requirement before a student can be granted associate membership of the NZSA. Writing in 1978, Markell recommended a four-year degree to follow the American direction but this has not occurred.

Since 1989 the NZSA has ceased to offer its own examinations. Although there have been two previous attempts (1967, 1971) to make the profession graduate-only entry, the NZSA has rejected this option. To replace its own examinations a new alternative to degree entry has been created. Under this alternative a student can study for the National Certificate of Business Studies (NCB) offered by polytechnic institutions and controlled by a government agency, the Authority for Advanced Vocational Awards. The NCB consists of the equivalent of two years of full-time study. To qualify for membership students choosing this option will require the

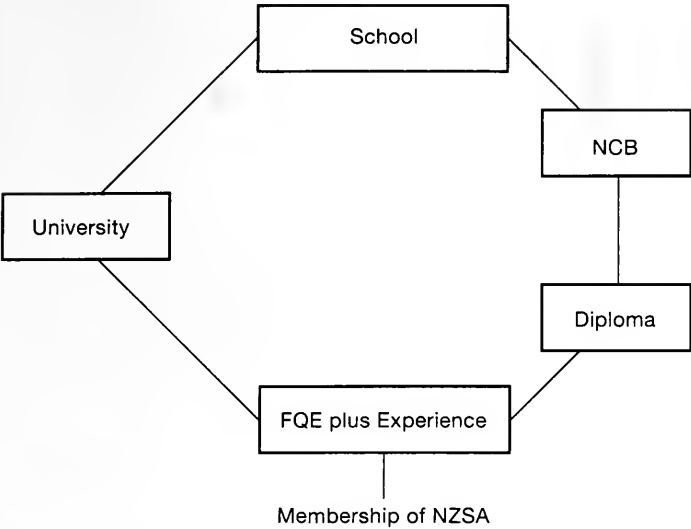


Fig. 1. Educational options for professional membership.

equivalent of a further two years of full-time study for the Diploma in Accountancy. This Diploma will be offered by some universities and selected polytechnics.

Monitoring of this arrangement and of university degrees will be undertaken by the NZSA and their courses will be compared to the NZSA’s *Common Body of Knowledge*.

Students choosing either the degree or diploma option will also be required to sit a *Final Qualifying Examination* (FQE) which will be administered by the NZSA. This will consist of a one paper examination concerned with professional topics such as ethics and accounting standards. These arrangements are shown in Fig. 1.

Educational Content

A content analysis of university calendars indicates that institutions now typically offer first, second and third-year courses in financial accounting and management accounting. Courses are also offered in business law, economics, taxation, auditing, computing and statistics. The flexibility in the choice of subjects available to students who wish both to major in accounting and to obtain full cross-credit for membership of the NZSA varies widely between universities. At Otago, for example, the amount of free choice of subjects available to students is only 6 percent of the total degree whereas at Auckland it is of the order of 25 percent. This is because the Otago program is structured as eight multi-paper/subject units whereas the Auckland degree is based on a larger number of smaller, stand-alone papers (subjects).

Comparing the 1978 calendars with those of 1988, it is apparent that students now have a much wider choice of courses within an accounting major and also more ready access to subjects in other disciplines such as modern finance courses. In New Zealand, the teaching of finance is more closely allied to accounting than it is to

Table 3. An accounting major

Year 1	Year 2	Year 3
Financial accounting	Financial accounting	Financial accounting
Management accounting	Management accounting	Management accounting
Business finance	Business finance	Business finance
Economics	Business law 1	International accounting
Management	Marketing	Taxation
Computing	Business law 2	Auditing 1
Statistics	Business law 3	Auditing 2

economics and it is generally taught within accounting departments. There has also been a considerable growth in honors and postgraduate courses over this decade. Given that each university has a different degree structure, it is difficult to generalize but a typical accounting major may do the courses shown in Table 3 in a three-year full-time degree.²

Among the growth or new areas are public sector accounting, international accounting, accounting information systems, accounting history, and behavioral accounting. Increasingly at the honors and postgraduate levels there is an emphasis on formally teaching research methods. These developments follow those overseas, particularly the United States. There was, however, a considerable time lag between the emergence of these developments overseas and their inclusion in New Zealand curricula. Possibly as a result of the more dynamic business environment and improved staffing levels, New Zealand courses are now more in line with present overseas courses, although as discussed above there is more emphasis on conceptual material.

Developments in New Zealand have been tardy, in part, because of a lack of resources. For example, in computing, at the time when many overseas institutions were considering requiring students to purchase their own micros, New Zealand universities were struggling to find funds to establish their own micro-laboratories. Even today staff and students still have relatively poor access to computer hardware.

Supply and Demand Considerations

Historically the supply of accounting graduates in New Zealand has failed to match the demand for them (Moores, 1987). This pattern is exemplified in statements like:

Record numbers of new members are joining the Society (NZSA) every year... but the business world needs even more – the supply does not match the demand (Hambledon, 1988, p.1).

There are, however, signs following the 1987 share market crash which had a significant effect on the New Zealand economy and, allowing for some lag while employers adjusted to the new circumstances, of a slowing in demand for accounting graduates in terms of less active recruitment by many firms. In part this is due to the slow-down in the New Zealand economy and in part to the increased supply of graduates. An indefinite increase in the supply is unlikely.

New Zealand's aging population (see Table 4), like that of most developed western countries implies that there may well be a decline in the number of students entering university in general, and accounting in particular, in the future. However, the incidence

Table 4. Projected growth of total population (%)

Age range:	0-4	5-14	15-24	25-44	45-59	60+	Total
1981-1991	4	-15	1	30	11	21	10
1991-2001	-2	4	-16	10	36	10	8
2001-2011	-13	-2	-12	-1	68	33	12

Source: Census of Population and Dwellings.⁷

of university education in New Zealand is low and could increase; the Watt’s Committee Report of the Universities’ Review Committee to the New Zealand Vice Chancellors’ Committee, Wellington, October 1987, has commented on the need to increase participation rates in New Zealand university education and drawn attention to the present low rate:

The annual output of graduates per 100 000 of population in New Zealand at 272 is similar to that of the UK (280), but substantially below that of Australia (430), Japan (432), Canada (616) and the USA (621). (New Zealand Universities, 1987, p. 19)

In addition to a possible increase in the incidence of university education, commerce and business administration have been lagging behind the general trend towards more equal participation by females. While in 1975 39.2 percent of the total student population was female, only 16.4 percent of commerce students were female. By 1985, 49.5 percent of the total student population were female but for commerce this figure was still only 34.5 percent. A reasonable conclusion from these trends³ is that commerce in general, and accounting in particular, still has potential for growth in the short term.

The main constraint to further growth in student numbers is the lack of staff at universities. Salaries for academics, particularly in commerce, are poor by comparison with those in industry and commerce: “At present universities cannot meet the demand for accountancy studies because they cannot pay a market wage for accountancy lecturers.” (Government Management, 1987, p. 195).

The marked increase in demand for commerce graduates in general, and accounting graduates in particular, fueled as it has been by deregulation, undoubtedly lies at the heart of the faculty supply crisis. But it is by no means a local phenomenon since similar demand patterns have emerged in America, Britain and Australia. Jensen and Arrington (1983) observed that in the United States.

The 1980s promise a decade in which accounting education moves to the public forefront as the most highly demanded degree program in academe... The message is clear: society needs accountants; and, more directly, they are looking to higher education to fill that need quickly.

Local indicators in the job market, the salaries being offered, and the disquiet over university entry restrictions echo these same sentiments in New Zealand.

Unfortunately, the faculty supply crisis has been with us for some time but the output effects of it are delayed thankfully by those in the education system coping. This initially maintains output quantities but ultimately places stresses upon the system that can only be overcome through reductions in quality or some form of entry restriction. It has been through choosing the latter that universities have communicated the extent of the problem which, until this point in time, had perhaps been underestimated by some accountants (Moore, 1987).

Table 5. Highest qualification of academic staff

Qualification	1978 (no.)	1978 (%)	1988 (no.)	1988 (%)
PhD	10	11	32	23
Other doctorate	0	0	2	1
Masters degree	40	44	64	45
Bachelors degree	37	40	40	28
Professional qualification	5	5	4	3
Total	92	100	142	100

Source: Estimated from university calendars.

To cope with this problem the solution has been to restrict entry to accounting courses. As of February 1988 all but one university has imposed some form of restriction of entry. Despite this staff recruitment problem, the universities have met with some success in recruiting academic staff. In the period 1975 to 1985 university academic staff increased by 19.7 percent whereas for accounting the equivalent figure is 54.4 percent. Against this, however, there has been a dramatic 98 percent increase in students studying for commerce and business administration degrees. This growth has caused considerable difficulties for accountancy departments. Despite a recommendation from the University Grants Committee⁴ that the staff/student ratios of universities should be 1 : 10,⁵ in 1988 the average of this ratio for New Zealand accountancy departments was 1 : 21.⁶ This ratio has improved over the past five years as a result of recruitment. Judged at least by the qualifications of staff, this recruitment has not been at the expense of quality, as the improving situation in Table 5 demonstrates.

Continuing Profession Education

Unlike the United Kingdom and Australia, New Zealand does not have compulsory continuing professional education (CPE). However members are *recommended* (General Notes, 1988, p. 14) to attend courses to achieve a minimum of 30 hours of CPE per year, and indeed the NZSA mounts an extensive CPE program each year. In all some 30 full or half-day courses are offered in each year. These courses cover a wide range of topics including areas such as communication skills, taxation updates, and financial reporting developments.

Academics and practitioners wishing to offer courses submit a proposal to the continuing education committee of the NZSA. If accepted course materials are prepared and vetted by the NZSA. Course teachers are given a short training course by the NZSA to prepare them for the program and then the course is conducted at major centers throughout the country.

Conclusion

This paper has provided an overview of accounting education in New Zealand. Changes in both the structure and content of courses have been discussed. From this

it is clear that these changes are substantial and it is likely that continual change has now become a necessary feature of the educational process.

In New Zealand accounting education started later and developed slower than in the United States. However, recent years have seen rapid increases in the numbers of accounting graduates and faculty. While there has been a shortage of accounting graduates in New Zealand there are some signs that the supply crisis may be abating.

In New Zealand the undergraduate degree in accounting is shorter than its American counterpart. It is also less procedural in terms of the accounting content and yet contains virtually no element of liberal education. There are undoubted similarities in the content of accounting education world-wide but the British influence has created a different syllabus in New Zealand from that which is typical in America. The difference in syllabus reflects the different approaches to the regulation of accounting between New Zealand and America.

Notes

- 1 But regarded as a separate legal entity in New Zealand.
2. At most New Zealand universities the academic year is approximately 26 weeks, divided into three terms.
3. See Appendix for more details.
4. The Government agency responsible for funding of universities
5. Discussion paper no. 4 on Academic Staffing, by the University Grants Committee, October 1981.
6. Minutes of the 1988 Joint Conference between members of the Education Committee of the NZSA and the heads of accountancy, New Zealand universities.
7. Census of Population and Dwellings 1981, Department of Statistics, Projections of Total New Zealand Population 1983–2016 (base: 31 March 1982), Population Monitoring Group Report, Table 5, Page 44. As cited in *Horizon 2000* report, p. 8.

Appendix: University Trend Data

	1975	1976	1977	1978	1979	1980
Students attaining:						
University scholarship	138	166	174	195	215	236
University bursary	3 707	4 079	4 262	4 550	4 956	4 843
Higher school certificate	2 980	3 133	3 237	3 401	3 288	3 599
University entrance	7 633	8 266	8 826	9 360	9 365	9 321
Sixth form certificate	6 782	8 040	7 832	8 824	8 738	7 516
Total	21 240	23 684	24 331	26 330	26 562	25 515
Growth (%)		11.5	2.7	8.2	0.9	-3.9
University students						
Internal male	23 130	24 437	24 695	24 982	25 082	25 554
Internal female	13 801	15 459	16 154	16 853	17 456	18 379
External male	2 477	2 883	2 782	2 843	2 838	3 092
External female	2 714	3 428	3 317	3 645	3 774	4 274
Total	42 122	46 207	46 948	48 323	49 150	51 299
Growth (%)		9.7	1.6	2.9	1.7	4.4
Female (%)	39.2	40.9	41.5	42.4	43.2	44.2
University students						
Commerce and bus. admin.						
Male	3 512	3 645	4 200	4 180	5 087	4 881
Female	691	844	1 055	1 175	1 424	1 587
Total	4 203	4 489	5 255	5 355	6 511	6 468
Growth (%)	6.8	17.1	1.9	21.6	-0.7	-0.1
Female (%)	16.4	18.8	20.1	21.9	21.9	24.5
Graduating students						
Commerce and bus. admin.						
First degree	545	574	628	679	845	892
Postgraduate	39	16	42	32	59	56
Academic staff						
Male full time		2 531	2 577	2 609		2 777
Female full time		266	287	298		366
Male part time		1 231	1 240	1 251		1 356
Female part time		219	204	293		281
Total		4 247	4 308	4 451		4 780
Growth (%)			1.4	3.3		7.4
Female (%)		11.4	11.4	13.3		13.5

Source: New Zealand Official Year Book (1976-1987).

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1981	1982	1983	1984	1985
208	196	190	202	
4 981	4 936	5 488	5 849	
3 554	3 385	3 387	3 329	
9 224	8 679	8 852	9 708	
7 326	6 981	8 027	8 210	
25 293	24 177	25 944	27 298	
-0.9	-4.4	7.3	5.2	
25 673	25 411	25 600	25 808	25 664
19 063	19 900	20 870	21 645	22 135
3 212	3 436	3 795	4 020	4 583
4 816	5 402	6 248	6 769	7 486
52 764	54 149	56 513	58 242	59 868
2.9	2.6	4.4	3.1	2.8
45.3	46.7	48.0	48.8	49.5
4 737	4 820	4 993	5 193	5 453
1 723	1 898	2 328	2 589	2 875
6 460	6 718	7 321	7 782	8 328
4.0	9.0	6.3	7.0	
26.7	28.3	31.8	33.3	34.5
945	987	1 058	1 050	1 693
63	92	73	76	103
2 669	2 682	2 595	2 550	2 489
374	389	404	408	446
1 249	1 259	1 231	1 303	1 532
378	397	469	653	616
4 670	4 727	4 699	4 914	5 083
-2.3	1.2	-0.6	4.6	3.4
16.1	16.6	18.6	21.6	20.9

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Comprehensive Measurement of Foreign Income: The Case of SFAS No. 52

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Key words: SFAS 52; Currency translation; Income measurement; Equity adjustment; Statement elements; Comprehensive income

***Abstract:** Under SFAS No. 52, translation differentials are treated as direct equity adjustments (EAs), thereby bypassing the income statement of the consolidated entity. Fundamental questions arise as to whether investors perceive EAs as a component of consolidated income. The purpose of this paper is to gather evidence and test hypotheses related to this fundamental question. In so doing, implications of the relative homogeneity of income from various sources can be ascertained. If gains and losses arising from foreign currency translation are in the nature of income, then, by implication, a comprehensive net income can be used to measure the performance of multi-national corporations with foreign subsidiaries. The use of this comprehensive measure of income, in turn, would enhance the ability of investors to analyze the results of periodic performance for the consolidated entity. We have obtained evidence that the market reaction, via the capitalization of reported earnings, is consistent with the notion that EAs under Statement No. 52 are in the nature of income. This evidence indicates that the gains and losses arising from the translation of foreign subsidiary operations into the reporting currency of the parent are relatively homogeneous with consolidated operating income.*

In 1981, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 52 (SFAS No. 52), "Foreign Currency Translation," superseding SFAS No. 8, "Accounting for the Translation of Foreign Currency Transactions and Foreign Currency Financial Statements." Under both pronouncements gains and losses arising from foreign currency transactions (FCTs) require income statement recognition. However, whereas SFAS No. 8 mandated gain and loss recognition for the foreign currency translations of foreign subsidiaries, under SFAS No. 52 translation differentials are treated as direct equity adjustments (EAs), thereby bypassing the income statement of the consolidated entity. Fundamental questions arise as to whether investors perceive EAs to be in the nature of income.

no different from regular income (or gains and losses arising from FCTs). The purpose of this study is to gather evidence and test hypotheses related to these fundamental questions. In so doing, implications on the relative homogeneity of income from various sources can. If gains and losses arising from foreign currency translation are in the nature income, then, by implication, a comprehensive income can be used to measure the total performance multi-national corporations with foreign subsidiaries. This would, in turn, enhance the ability of investors to analyze periodic performance of multi-nationals and compare these results both temporally for the same entity and across firms.

The remainder of this paper is divided as follows. First, brief discussion of the history of accounting for foreign currency translation is presented and the previous work on the association between market values and accounting earnings is reviewed. This is followed by the general model and hypotheses for the current study. Then the sample and experimental design are described. Finally, the results are presented and conclusions are given.

Accounting for Foreign Currency Translation

The issue of foreign currency translation has been one of the most controversial areas of financial reporting. In 1975 the FASB issued SFAS No. 8, which required that translation gains and losses be treated as a component of current earnings (FASB, 1975). SFAS No. 8 was believed to lead to increased earnings volatility and fictitious gains and losses (Seidler, 1982). In response to criticism of SFAS No. 8, the FASB issued SFAS No. 52 in 1981 (FASB, 1981). A lack of consensus about the change was evidenced by the close 4–3 vote. A key difference between these two standards is that under SFAS No. 52 translation gains and losses no longer flow through income as they did under SFAS No. 8. Rather, they are relegated to a separate component of owners' equity. Although many firms expressed support for the new rules, some researchers were concerned about the propriety of reporting foreign currency translation gains and losses in stockholders' equity (Beaver and Wolfson, 1984).

Garlicki et al. (1987, p. 36), in support of SFAS No. 52 requirements, argue that these translation gains and losses are just "paper" figures and are not related to firms' future cash flows, and eliminating these gains and losses may lead to higher quality earnings. They also indicate that EAs measure "the company's risk exposure to exchange rate fluctuations, which is an accounting exposure, not necessarily an economic exposure." Conversely, Beaver and Wolfson (1982) believe that the economic forces that led to a change in exchange rate are likely to have caused a change in the market value or current cost of that item as well. They indicate that Statement No. 52 did not correct the basic "error" of SFAS No. 8, but also extended the "error" by not recognizing translation gains and losses in firms' income statements. They suggest that rather than "tossing" translation gains and losses into equity, they should be considered in conjunction with items appearing on the income statement.

The controversy over the nature of translation gains and losses and whether they are elements of income or direct equity is yet unresolved. No empirical evidence has been given in accounting literature to support either view. Moreover, it is unlikely that this conflict can be resolved by *a priori* reasoning alone, although the direct equity adjustment does appear to be in conflict with Statement Elements construction under Statement of Financial Accounting Concepts (SFAC) No. 6 (FASB, 1985) and accounting texts.

Accounting texts introduce gains and losses as elements of income statement. *Intermediate Accounting* by Welsch et al. (1986, p. 24), for example, defines gains and losses as elements of income statement in a broad sense as:

Gains (losses) are increases (decreases) in equity (net assets) from peripheral or incidental transactions of an entity and from all other transactions and other events and circumstances affecting the entity during a period except those that result from revenues or investments by owners (expenses or distributions to owners).

Focusing the ingredient of a comprehensive income, the Board (SFAC No. 6, para. 74) indicated that:

Comprehensive income of a business enterprise results from (a) exchange transactions and other transfers between the enterprise and other entities that are not its owners, (b) the enterprise's productive efforts/ and (c) *price changes*, casualties, and other effects of interactions between the enterprise and the economic, legal, social, political, and physical environment of which it is part... (emphasis added).

Gains and losses that arise from currency theoretically more appropriate to be considered as elements of the income statement rather than direct adjustments to retained earnings. Since these gains and losses arise fundamentally from price changes, albeit relative currency price changes.

In this paper a theoretical equity valuation model will be employed on a sample of firms to test the association between EAs and market value of a firm. This model has been used in several studies to examine whether the reported earnings measured based on generally accepted accounting principles (GAAP), or an unreported measure of earnings, better explain cross-sectional differences in the market value of a firm. The following are three leading studies that applied similar capital market models.

Dukes (1976) focused on R&D expenditures and the question of whether it should be expensed or capitalized. He concluded that reported earnings are systematically adjusted before they are impounded into security prices, which itself is consistent with the hypothesis that investors look at information beyond reported earnings. Foster (1977) also used a similar capital market model and found that earnings together with the information reported in the footnotes of financial statements are more associated with firms' market value than reported earnings alone. Bowen (1981) examined the non-operating income account (Allowance for Funds Used During Construction (AFC)) in the electric utility industry. His object was to examine whether the AFC component of reported earnings had a lower multiple than operating component of reported earnings. Bowen concluded that although the AFC component had positive economic value, it was generally less valuable per dollar (i.e., lower earnings multiplier) than operating earnings. Each of the above studies is consistent with the notion that the capital market makes adjustments to the reported earnings figure when setting market prices.

General Model and Hypotheses

To test the relative homogeneity of income, an amended version of the Litzenberger–Rao model is employed (Litzenberger and Rao, 1971). The general functional form of this model is:

$$V_{it} = f(E_{it}, R_{it}, G_{it}) \quad (1)$$

where:

- V_{it} = the market value of firm i in period t ;
- E_{it} = expected earnings of firm i in period t ;
- R_{it} = non-diversifiable risk of firm i in period t ; and
- G_{it} = growth of firm i in period t .

The market value of the firm can be viewed as a capitalization of earnings, adjusted for both risk and growth. This model has used to test whether various measures of earnings better explain differences in the market value of firms (e.g., Dukes, 1976; Foster, 1977; Bowen, 1981).

In this study, earnings is decomposed into two parts: net income inclusive of FCTs gains and losses and EAs. This breakdown permits testing of the relative homogeneity of income by comparing the coefficients of the empirical model against zero (a one-tailed test).

Given the model, the first hypothesis is related to the question of whether such a model explains variation in the dependent variable. That is, does the model explain cross-sectional variation in the market value of the firm? The second hypothesis relates to the question of whether or not the addition of EAs adds explanatory power. If the addition of EAs better explains variation in the dependent variable over income alone, then evidence would be provided that EAs are in the nature of income and that its exclusion is inconsistent with market capitalization. Further, from a homogeneity point of view, this would also be evidence that translated income related to foreign subsidiaries should be included in the income statement and that foreign subsidiaries' operations can be translated into a single reporting currency. The final set of hypotheses relates to the individual coefficients of the model. Theoretically, under a homogeneous income approach (alternative hypothesis), both income coefficients should be individually significant and positive. Conversely, if the equity adjustments are ignored by the markets, then the Statement No. 52 approach would not only be supported, but the ability to combine gains and losses arising from translation, in a meaningful way, with a single reporting currency measure of income would be impaired.

Experimental Design and Sample

Due to differences in the size of the firms in our sample, an unscaled valuation model is likely to be heteroscedastic. The model will be estimated in a deflated form, with accounting book value of common stockholders' equity as the deflator. This representation can also be interpreted as expressing income as a return to

common stockholders' equity. Therefore, the empirical model 1 used in this study is as follows:

$$V_{it}/B_{it} = \alpha_{it} + \beta_{1it} NI_{it}/B_{it} + \beta_{2it} EA_{it}/B_{it} + \beta_{3it} R_{it} + \varepsilon_{it} \quad (2)$$

where $i=1, 2, \dots, N$; $t=1, 2, \dots, T$ and:

V_{it} = the market value of firm i in period t ,

B_{it} = the accounting book value of common stockholders' equity;

α_{it} = intercept term;

NI_{it} = net operating income + FCT to book value of firm i ;

R_{it} = the systematic risk as measured by the market model to book value of firm i ; and

ε_{it} = a disturbance term assumed i.i.d. $N(0, \sigma^2 I)$.

The hypotheses of interest are in null form:

Test 1: Model F -test: $\frac{\text{SSE of model}/df}{\text{MSE}} = 0$

Test 2: Full version reduced F -test due to EA:

$$\frac{(\text{SSE}_{\text{full}} - \text{SSE}_{\text{reduced}})/df}{\text{MSE}_{\text{full}}} = 0$$

Test 3: $\beta_{1it} \leq 0$ (one-tail); and

Test 4: $\beta_{2it} \leq 0$ (one-tail).

Test 1 is a test of overall model significance. Test 2 is a test of whether adding EA significantly adds explanatory power over a reduced-form model. Tests 3 and 4 determine whether or not the income variables are significant and in the theoretically expected direction. Stated differently, if these variables are statistically significant and positive individually, then the rationale for different accounting treatment would not be supported in that both earnings streams would appear to be capitalized by the market. Conversely, if either the b_{2it} is insignificant or negative, while b_{1it} is significant and positive, then the different treatment required under SFAS No. 52 for the underlying EAs is supported.

Since the provisions of SFAS No. 52 were not mandated for firms until year-end December 15, 1982 and the year of adoption itself may have transitional amounts, the initial sample consists of those firms having non-missing and non-zero EAs for the periods 1984 to 1987. Since changes are required to measure EAs, this permits three test periods: 1985, 1986 and 1987. A total of 255 firms on COMPUSTAT met these data requirements. The sample was reduced to 156 companies by requiring a calendar year-end. CRSP daily return information constraints reduced the sample to 143. The final sample consisted of those firms whose $ABS(EA)/ABS(NI)$ exceeded 10 percent. This ensured that the sample selected would have EAs that comprised a significant "would-be" component of income. Finally, cross-sectional as well as pooled results will be presented for the sample thus selected.

Table 1 presents the overall model results. Clearly the full model is significant for all years and pooled amounts. Significant pooled and cross-sectional variations in market-to-book value of equity is being "explained" by the inclusion of the

Table 1. Overall Model Tests

	Observations	R^2	Adj. R^2	F -Value	P -Value
Pool					
Full Model	268	.7691	.7665	293.196	.0001
Reduced Model	268	.1349	.1284	20.670	.0001
Year 1985					
Full Model	83	.9379	.9355	397.734	.0001
Reduced Model	83	.3731	.3574	23.806	.0001
Year 1986					
Full Model	84	.3342	.3092	13.385	.0001
Reduced Model	84	.1253	.1037	5.803	.0044
Year 1987					
Full Model	101	.2625	.2397	11.506	.0001
Reduced Model	101	.0098	-.0104	0.484	.6181

Table 2. Full versus Reduced F -Test Due to Inclusion of EA in the Model

	Different sum of squares	Degrees of freedom	Mean square	F -value	P -value
Pool	4140.328	1	5.7087	725.266	.0001
Year 1985	3486.334	1	4.8519	718.550	.0001
Year 1986	34.091	1	1.3584	25.096	.0001
Year 1987	41.195	1	1.2395	33.235	.0001

theoretical variables of the full model. However, these tests imply nothing specifically about the inclusion of EAs into the model.

Table 2 presents the full versus reduced F -tests on the inclusion of EA into the model. Again, the inclusion adds significantly more explanatory power than the reduced model. In fact, the reduced model itself would be insignificant in 1987, but for the inclusion of the EAs (See Table 1, year 1987). Thus, the inclusion in market-to-book value of equity than risk-adjusted income as measured under SFAS No. 52. However, this test has no implication of whether the income variables contribute in a manner that is consistent with the theoretical model.

Finally, Tables 3 and 4 report tests on the individual coefficients of Income and EAs respectively. In all cases, the coefficients are statistically significant and in the correct direction, assuming the EA adjustment is in the nature of income. The inference is that the market is responding to a more comprehensive measure of income than is required to be reported under SFAS No. 52.

Although the results obtained may be sample specific, as the coefficients may be unstable over time, the results in this study seem to confirm the position that EAs are in the nature of income, contrary to the FASB treatment under Statement No. 52.

In conclusion, we have obtained evidence that the market reaction, via the capitalization of reported earnings, is consistent with the notion that EAs under Statement No. 52 are in the nature of income. This evidence indicates that the gains and losses arising from the translation of foreign subsidiarys' operations into the reporting currency of the parent are perceived by investors to be similar to consolidated operating income, including FCTs. By inference, comprehensive income, including translation

Table 3. Income Including FCTs

	Estimated coefficient	Standard error	t-value	P-value
Pool				
Full Model	4.8817	0.5435	8.981	.0001
Reduced Model	6.5918	1.0430	6.320	.0001
Year 1985				
Full Model	4.0864	1.0500	3.892	.0002
Reduced Model	19.1358	2.8017	6.830	.0001
Year 1986				
Full Model	1.6965	0.4285	3.959	.0002
Reduced Model	1.4514	0.4849	2.993	.0037
Year 1987				
Full Model	2.1553	0.5980	3.604	.0005
Reduced Model	0.5806	0.6132	0.947	.3460

Table 4. Foreign Currency Adjustment (Balance Sheet Item)

	Estimated coefficient	Standard error	t-value	P-value
Pool				
Full Model	31.3016	1.1623	26.931	.0001
Year 1985				
Full Model	40.1910	1.4993	26.806	.0001
Year 1986				
Full Model	8.3722	1.6712	5.009	.0001
Year 1987				
Full Model	8.3816	1.4538	5.765	.0001

gains and losses, measured by the consolidation and translation processes is more meaningful in assessing the performance of multi-national economic entity than the one prescribed by SFAS No. 52. These gains and losses are not merely paper adjustments, as some have argued, with no market effect. Rather, the results of this study seem to confirm the proposition of those who argue that EAs are in the nature of income.

Notes

1. All variables are scaled by book value of equity (*Bit*). Theoretically, this expresses the income as returns, while empirically scaling avoids unwanted size effects. The growth term is omitted owing to both theoretical and measurement problems discussed in the literature.

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Book Reviews

The Financial Markets of Hong Kong by *Andrew F. Freris*, Routledge, London, 1991, 264pp, ISBN 0 415 02079 4. US\$40.00

Freris' book makes a substantial contribution to the international business and finance literature. The book's six chapters provide a thorough analysis of the following aspects of Hong Kong's financial markets: banks; deposit-taking companies and the capital markets; the stock exchanges; futures, gold, investment management and related regulations; the foreign exchange rate, monetary and fiscal policy.

The author accomplishes his goals. He maps in a coherent way the development of Hong Kong's financial markets and provides insights into the steps being taken in the transition of this city state back to the People's Republic of China (PRC) in 1997.

This book is well written and can be used by academics and practitioners who wish to learn of Hong Kong's fascinating financial markets. The text's 82 tables and 238 notes provide a wealth of information.

Freris begins by describing the phenomenal economic growth of Hong Kong over the past 10–15 years. Gross domestic product (GDP) grew at an average rate of 10.2 percent during the 1970s and 7.3 percent during the 1980s. This growth has been accomplished by very low rates of inflation. This growth is dependent on two sectors: productivity and capital accumulation; the latter contributed 46 percent to the overall growth.

The city state's government has helped spur growth through two different policies – income and business taxes have been kept low, and the government runs budget surpluses rather than deficits.

Exporting has played a major role in Hong Kong's rapid growth. China is a major importer of goods and services, accounting for 31 percent of Hong Kong's total exports. Hong Kong is the main source of direct investment in China; in 1987 it accounted for 65 percent of the direct investments made in China. In turn, China also invest heavily in HK. For example, the bank of China is now the second largest local bank in Hong Kong.

Freris continues by examining the financial markets and institutions and security markets. Entrance into the Hong Kong banking market is relatively unrestricted. The number of licensed banks increased from 123 in 1981 to 160 in 1988. The local retail side of the banking market is controlled by five banks. The author describes the

economic implications of such a banking structure, and also examines the banking market in terms of locally incorporated banks and overseas banks.

Deposit-taking companies (DTCS) add a unique twist to Hong Kong's financial markets; they are owned by banks but restricted by law as to the type of deposits they can accept. DTCS are excluded from retail operations and, more importantly, they are not covered by interest rate restrictions. Freris sees price competition increasing in terms of interest rate margins on both loans and deposits. He notes that cartel arrangements relate only to the basic retail side of deposits, and banks have circumvented interest rate agreements by establishing their own DTCs.

The author states that the division between local and foreign banks is rapidly eroding in Hong Kong; real growth will be on the international side. This is evident from the expansion of Hong Kong banks to include holdings in US and UK banks. Japanese banks have an important presence in the banking market; they represent approximately 18 percent of the licensed 160 banks in Hong Kong. Many thought that the Asian banking market would shift from Hong Kong to Tokyo. So far this has not been true.

China's emerging role in Hong Kong's banking market can be viewed in two distinct ways. First, the Bank of China group will continue to consolidate and expand its activities. It has already shown a willingness to bail out failing banks and it helped to cushion the shock of the 1987 stock market crash. Second, China will use Hong Kong as a training ground for future bankers who will have to manage China's developing financial and banking system.

Following a bank crisis in 1965, the Hong Kong Government imposed a moratorium on issuing new banking licenses; this was lifted in 1978. Finance houses exploited a loophole in the law and began to accept deposits and offer bank services. These finance companies, since they were unregulated, grew very rapidly. Foreign banks that were barred from the Hong Kong market began to use the finance companies as an indirect form of entry into the market. The author describes the problems associated with the unregulated rise of non-bank financial intermediaries, collectively known as deposit-taking companies (DTCS).

The first stock exchange in Hong Kong was established in 1891. During the late 1960s and early 1970s three more exchanges opened in Hong Kong. The proliferation of exchanges led to an explosion in the number of listed companies and brokers. Market activity boomed, with the Hang Seng Index (HSI) reaching a record high in March, 1973. By the end of 1974 the market was at a low. The outcome of this crisis was the establishment of a number of regulatory measures and a Securities Commission. All four exchanges were finally consolidated in 1986. In early 1989 the Stock Exchange of Hong Kong listed 468 securities in 301 companies.

Freris presents an analysis of the efficiency of the Hong Kong stock market; 11 event studies are reviewed. The author extends his examination of the financial markets by looking at futures, gold, investment management, and regulations. The two most important developments in these markets have been the rise and fall of the stock index futures market based on the Hang Seng Index and the development of Hong Kong as a regional investment center. The development of Hong Kong's special markets for futures and commodities was met by stiff competition from similar markets in Singapore and Tokyo.

Hong Kong's financial markets have experienced much in the 1980s – bank failures in the early part of the decade, then the stock market crash of 1987. These and other events led the government to enact stringent legislation to regulate the markets. First, a Securities Review Committee made extensive recommendations for change. Second, the government replaced almost all leading members of the stock exchange. Finally, the government enacted a series of ordinances to regulate and define the powers of the Securities Commission.

The stock market crash of 1987 caused educated observers to identify several weaknesses. First, the legal and institutional framework that existed in 1987 emphasized self-regulation. Second, the settlement system lacked a central clearing house. Third, the Futures Exchange had a confusing and ineffectual clearing and risk management system. The Securities and Futures Commission Ordinance of 1989 addressed the first two of these problems.

Hong Kong does not have a central bank. Control over the quantity of cash, and the quasi-monetary policy, is handled by the Hong Kong Bank and the Standard Chartered Bank.

From 1945 until 1967 the HK dollar was fully backed by sterling assets. In 1967 sterling was devalued considerably. In 1983, the HK dollar was again pegged to the US dollar. The author views the decision to peg the HK dollar to the US dollar in 1983 as perhaps the single most important policy action for Hong Kong's financial markets.

The decision to peg the HK dollar to the US dollar shows that the Government of Hong Kong truly has a "hands-off" monetary policy. The pegging of the rate against the US dollar has promoted confidence and stability in the Hong Kong financial market. With Hong Kong reverting to China in 1997, one would think that people would not invest in Hong Kong, but confidence and stability remain high even after the events of June, 1989 took place.

This review provides a broad overview of a book that thoroughly examines the many aspects of the financial markets of Hong Kong. The book is recommended to financially oriented businessmen, academics, and policymakers interested in financial markets and/or international business.

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Contemporary Issues in Accounting Research *edited by Bhabatosh Banerjee. Indian Accounting Association Research Foundation, Calcutta, 1991, US\$25.00*

One problem of current accounting research has been the relatively weak exchange of ideas among researchers from different countries. This problem is especially apparent in the slow dissemination of theoretical and methodological developments

in accounting research from the developed to the developing countries. Accounting researchers in developing countries, as a result, have had to reinvent the research wheel and accounting research is still in its infancy in most developing countries. Additionally, little or no testing of accounting theories and hypotheses formulated in the developed countries has been conducted in different environmental settings, i.e., developing countries. Such testing has the potential to capture an array of environmental variables not hitherto considered by researchers in developed countries and, thereby, provide valuable insights for understanding, refining, and strengthening the theories or hypotheses under study. The examination and testing of the efficient market hypothesis in relation to non-US markets are a case in point.

The book, *Contemporary Issues in Accounting Research*, is a bold attempt to provide such a research framework. Published under the auspices of the Indian Accounting Association Research Foundation, the book represents a collection of commissioned papers by authors from different parts of the world. For purposes of this review, I have broadly categorized the papers in the book into three main sections: (1) research methodology; (2) international accounting research; and (3) accounting research in India.

Papers in the research methodology section deal with different modes of research. The paper by Basu should be read first since it provides an excellent discussion of the evolution of academic research in financial accounting from 1900 to the present. Basu divides the period into four segments: the important developments and notable works in each of the four segments are highlighted and discussed. Though the paper mainly has an Anglo-American focus, of particular note is Basu's discussion of the contributions made by continental European researchers to academic accounting research.

Mattessich's paper is a good example of the normative-deductive method of research. The paper examines and seeks to clarify issues surrounding the debate over whether certain accounting variables are concepts or have a physical or social reality. The paper also seeks to clarify to what extent accounting measures are based on real phenomena and how measurements in accounting and the social sciences would be expected to differ from measurements in the natural science: The paper requires careful reading and a familiarity with the "reality" debate in accounting.

* The paper by Jaggi provides an overview of positive accounting theory. The evolution, nature, methodology, and empirical tests of positive accounting theory are critically discussed and evaluated. The paper provides a good summary of the important issues surrounding positive accounting theory and should serve as a useful introduction for those not familiar with this area of research.

The paper by Banerjee discusses agency theory and its relevance to management accounting research. The paper gives a detailed review of agency theory; however, the linkage/application of agency theory to management accounting only receives limited coverage.

The paper by Roberts and Gray provides an excellent review of research in accounting information and earnings predictions. The paper evaluates the relative strengths and weaknesses of naive prediction and Box Jenkins models to predict annual and quarterly earnings. The use of segmental information to provide improved forecasts is also discussed.

The papers in the first section provide an overview of some of the more important theoretical and methodological developments in academic accounting research. The papers in the second section, in general, represent more applied research in the international accounting area.

In a thought-provoking paper, Most examines the incidence of oversimplification in international accounting research. The problem of oversimplification is examined in relation to the harmonization, classification, and differences in accounting system research in international accounting. Though the author's conclusion that international accounting research has produced nothing of significance is probably too harsh, the paper does raise a number of important issues for researchers in international accounting.

The paper by Shoenthal et al. examines the harmonization of accounting education and training in the Asian-Pacific region vis-à-vis international accounting guidelines. Results of their survey indicate that accounting education and training in the Asian-Pacific countries is harmonized in certain areas. The authors, however, rightly note that it may be more important to harmonize the quality of accounting education and training rather than the mere form.

Anyane-Ntow's paper compares the effects of just-in-time (JIT) production systems on certain ratios for a sample of Japanese and US firms. The paper gives an excellent discussion of JIT production systems but suffers from some weakness in the research design. While the sample of Japanese and US firms in the study is matched by industry, matching on the size criteria is not undertaken. The results of the study may, therefore, be distorted due to the failure to control for the size effect. Furthermore, no attempt is made to reconcile or control for differences in accounting principles between Japanese and US Generally Accepted Accounting Principles (GAAP). Such differences may limit the usefulness of ratio comparisons between companies domiciled in different countries and preparing financial statements under different accounting principles.

The next three papers do not specifically deal with international accounting issues but have been included in this category because they may have some implications for international accounting research. Rueschhoff and Costigan in their paper explore the unique reporting issues surrounding development stage enterprises. Issues such as disclosure of development stage, reporting of pre-operating development cost write-off, and disclosing the going-concern ability of the development stage enterprise are discussed with reference to US accounting and auditing standards in this area. The authors also analyze and comment on the relative lack of progress in international accounting and auditing standards in dealing with issues associated with development stage enterprises.

Someya, in his paper, argues that too much attention is being focused on the external financial reporting function of accounting. As a result number of important accounting functions, such as providing information for managerial decision-making, are being ignored. Someya calls for a re-examination of accounting's function relative to the socio-economic environment existing in different countries.

Hicks' paper outlines his approach to the cash flow basis of accounting. Hicks operationalizes and demonstrates this approach using a set of journal entries and preparing basic financial statements. Given the increasing demand for cash flow

information by users of financial statements, Hicks' approach holds promise.

The papers in the last section deal with accounting research in the Indian context. The paper by Roy should be read first because it traces the evolution and progress of accounting research in India with special reference to the role played by the two main Indian professional accountancy bodies. The relative lack of academic research in India is highlighted but what is more disturbing is Roy's recommendation that accounting academics concentrate largely on theoretical and conceptual research topics. Accounting is by nature a practical discipline and, considering the important changes taking place in accounting in India, it would seem a more fruitful approach would be to encourage growing cooperation in research between accounting academics and practitioners.

Chaudhuri's paper is a good example of a study that has benefited from theoretical and methodological developments in the United States. The study deals with beta estimation, beta stability, contemporaneous association between estimated data and selected accounting variables, and tests of the Capital Asset Pricing Model (CAPM) using a sample of Indian firms actively traded on Indian stock exchanges. While the study suffers from some shortcomings that are acknowledged by the author, the study is noteworthy in that it is one of the first studies to apply the CAPM model to an Indian setting. One practical problem with the paper is that it is written entirely in narrative form and does not present any tables or report any empirical findings. This may preclude other researchers from replicating or extending Chaudhuri's seminal work unless the empirical results have been published in some other research forum.

Also building on research in the United States, Ghosh in his paper examines the impact on reported earnings of changes in accounting policies for a sample of Indian firms. Results of the study suggest that firms have a tendency to make changes in accounting policies that have a favorable impact on reported earnings. The study could have been further strengthened by examining the economic consequences of accounting policy changes vis-à-vis security market prices. A second part of Ghosh's study examined the extent of compliance by a sample of Indian firms with disclosure requirements issued by the Accounting Standards Board (ASB). The ASB has been constituted by the Institute of Chartered Accountants of India; the standards promulgated by the ASB do not have the force of law. Results of the study indicate that firms only comply with such requirements to the extent that the requirements are supported by legal enactments. The result of the study underscores the difficulty faced by the accounting profession in influencing accounting reporting practices in countries where standard-setting has been traditionally entrenched in the public sector.

Using a larger sample and differentiating between private and public sector companies, Banerjee in his paper also examined the extent of compliance by companies with standards issued by the ASB. The results of the study are largely consistent with those obtained by Ghosh. In the same paper, Banerjee also examines the harmonization of accounting standards in some South Asian Association for Regional Cooperation (SAARC) countries. The approach in this part of the paper is largely descriptive rather than comparative; however, of particular interest is the compliance of selected SAARC countries with international accounting standards.

Bhandari in his paper explores a problem related to developing countries, namely the exploitation of a large number of self-employed persons because of their ignorance

of accounting. In the Indian context, Bhandari develops a simple accounting system for low-income self-employed persons and suggests ways for its implementation. The model developed by Bhandari could also be applicable to other developing countries facing the same problem.

The paper by Chattopadhyay reviews the different social responsibility accounting approaches that have been forwarded in the literature and highlights issues that warrant attention. Good illustrations of issues surrounding social responsibility accounting are provided, with reference to Indian firms.

Sarker's paper reviews the different approaches to governmental budgeting with special reference to the Indian context. Sarker highlights the main problems in governmental accounting in India, especially the emphasis on the cash basis as opposed to accrual basis of accounting.

The papers in this section provide a kaleidoscope of current accounting research in India. The papers exhibit great diversity in terms of research areas covered. In general, the papers are well written, though they sometimes lack the conciseness to which one is used in the Western academic accounting literature.

I recommend this book for those interested in Indian accounting and accounting researchers in countries which have a similar research tradition like India. There are better books in research methodology and international accounting research but this book provides good examples of how sophisticated research methods and theories developed elsewhere can be applied to a different environment. One problem the reader should be aware of is the poor organization of articles in the book. The articles are not arranged based on any theme, though the summaries of the articles provided in the preface are useful in helping the reader decide which articles to read and in what order.

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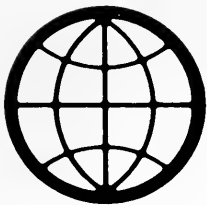
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Toward The Harmonization of Accounting Standards: An Analytical Framework

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Key words: Comparability; Harmonization; Uniformity

Abstract: *The increasing globalization of business operations and the need to communicate financial accounting information to an international audience have led to the need for the harmonization of accounting standards among nations. This paper provides a framework for analyzing accounting event categories, called uniformity analysis, which may aid in this effort. Uniformity analysis is defined and is exemplified by analyzing several event categories, and the policy implications of its application are discussed. Based upon the determination of the cash flow implications of accounting events, uniformity analysis can help in determining when and which alternative accounting methods are preferable, thereby contributing to the quality and the pace of accounting standard harmonization. The limitations to uniformity analysis and impediments to harmonization are also discussed.*

Introduction

The movement toward the harmonization of financial reporting has been gaining impetus as a result of the growth of a global market economy and constantly increasing improvements in information technology. The rise of multinational firms, the listing of securities of foreign corporations on major stock exchanges, the growth in cross-border financings, and the need to report on and audit these firms and such activities effectively, have spurred the drive toward harmonization. Indeed the International Organization of Securities Commissions is actively concerned with promoting the harmonization of accounting standards. In the United States the Chairman of the Financial Accounting Standards Board (FASB) sees improvement in financial accounting standards as an integral accompaniment to the drive toward harmonization.¹ Hence commonality or similarity among sets of national accounting standards should not be keyed merely toward a minimum threshold of acceptability, but rather toward increasing their utility for users.

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Van der Tas provides a useful distinction when defining harmonization.² *Formal harmonization* is defined as the degree of similarity existing among the sets of financial standards of various nations. *Material harmonization* refers to the degree of similarity among financial reports of enterprises. Formal harmonization would be above material harmonization in a hierarchical sense because the former provides a means of accomplishing the latter. In this paper we are concerned with the process leading to increased formal harmonization. We will use the word *harmonization*, therefore, as the process by which differences in national sets of financial accounting standards can be reduced.³

Increased harmonization hopefully should lead to a higher degree of comparability among financial reports on an international basis but this is not necessarily the case. The underlying reason for this possible disparity between harmonization and comparability is that national financial accounting standards, while growing more similar, could allow unwarranted choice among accounting methods in similar situations. However, a tool that improves evaluation of accounting event categories could, in turn, also facilitate the process of harmonization and improve the comparability of the end result. Specific help is needed for determining when alternative accounting approaches should be eliminated and when alternative accounting approaches should be allowed in the same event category. Indeed there have been many statements to the effect that eliminating unwarranted alternatives or prescribing standards that result in accounting for similar transactions in a similar manner should be the principal business of a standard-setting agency.⁴ A methodology which aids standard-setters in this determination and differentiation could increase comparability and harmonization.

Attempts to provide criteria to eliminate alternative accounting methods have come under the rubric of "uniformity." Unfortunately, this term has engendered a great deal of confusion and perplexity. However, it still provides the best umbrella for categorizing some useful concepts which could lead to increased harmonization. The purpose of this paper is to provide a framework for analyzing accounting events that employs the concepts of uniformity. We believe this framework provides an efficient methodology for determining which alternatives are or are not appropriate in an accounting event category.

The concepts embodying uniformity will first be explained and illustrated, and a policy recommendation will be made. Analysis will then be provided of several troublesome event categories using the uniformity concepts. The last two major sections of the paper involve (1) problems of employing uniformity analysis and (2) difficulties of harmonization. A brief summary concludes the paper.

It should be noted that the discussion in this paper is within a historical cost context. The emphasis upon historical cost is not intended to rule out current value or constant dollar approaches. Certainly historical costing can coexist with these other systems, as was the case until recently with Statement of Financial Accounting Standards (SFAS) No. 33. The concepts presented here would play a more limited role under current value accounting where asset valuations are based upon either replacement cost or exit value using either direct or indirect measurements. However, they would still be important under constant dollar accounting because this type of system is an extension of historical costing.

The Concepts Presented

The contention of this paper is that uniformity is the key to increasing harmonization. Before examining uniformity, some underlying definitions must first be presented. The following come directly from the FASB's conceptual framework.⁵

Event: An event is a happening of consequence to an entity.

Transaction: A transaction is a particular kind of external event, namely an external event involving transfer of something of value (future economic benefit) between two or more entities.

Circumstances: Circumstances are a condition or set of conditions that develop from an event or a series of events, which may occur almost imperceptibly and may converge in random or unexpected ways to create situations that might otherwise not have occurred and might not have been anticipated.

The definition of "transaction" makes it clear that a transaction is a sub-set of the event category. Events are seen as the "sources or causes" of change in elements such as assets, liabilities, and equities. Events are not the only occurrences, however, that lead to changes in the various elements. This is why the word "circumstances" was used. The bounds between events and circumstances are not made clear in the conceptual framework. While the definition above states that circumstances develop from events, the demarcation between them is simply not clear. Usage of the two terms in paragraphs 32, 135, and 136 makes it impossible to differentiate logically the terms as they are used in Statement of Financial Accounting Concepts (SFAC) No. 6. Nevertheless, "circumstances" must have been introduced to designate factors related to or stemming from events themselves that lead to changes in the various elements. Otherwise the word "event" would have been sufficient to cover factors causing changes in the elements.

When considering uniformity, a term is necessary for distinguishing where important factors may differ within event categories. This term, "relevant circumstances," in turn leads to two subcategories of events.

Relevant circumstances are economically significant circumstances which can affect broadly similar events. These economically significant circumstances are deemed to be general conditions or factors associated with complex events which are expected to influence the incidence, amount or timing of cash flows.

Simple events are not accompanied by relevant circumstances.

Complex events are accompanied by relevant circumstances.

Relevant circumstances, then, are "economically significant circumstances" which can potentially influence cash flows in broadly similar event situations. In set theoretic terms a broad event class or category can be designated as E_a . The members of this class, the actual event occurrences, would then be listed as $e_{a1}, e_{a2}, \dots, e_{an}$. As long as one member of the class, e_{a2} for example, is accompanied by relevant circumstances then the broad event class, E_a , is designated as a complex event. If no member of the broad event class is accompanied by relevant circumstances then the broad event class is designated as a simple event.

Cadenhead correctly noted that an infinite number of variables are present in an enterprise setting.⁶ Sunder made essentially the same point when he stated that no two transactions are exactly the same.⁷ Nevertheless, the standard-setting process, by its very nature, attempts to generalize and differentiate among economic happenings within an event category. The definition of relevant circumstances attempts to provide policy making bodies with a working mechanism for making appropriate distinctions within each event category.

A good example of a relevant circumstance involves income tax allocation. Some tax benefits resulting from using accelerated depreciation may be indefinitely deferred assuming that new fixed asset acquisitions prevent a net reversal of accelerated cost recovery system benefits, while in other event situations in this class, tax benefits may be repaid over a reasonable time horizon, such as a three- to five-year period. Hence, the timing (if not the incidence) of cash flows differs because repayment of tax benefits is deferred far into the future in one situation whereas benefits are repaid over a relatively short time horizon in the second case. Therefore, the potential repayment of tax benefits stemming from accelerated tax depreciation allowances would be a relevant circumstance. The broad event class being discussed here is income tax allocation. The relevant circumstance which can differ in specific situations involves whether benefits that have been received will be paid back or indefinitely deferred. Income tax allocation is thus a complex event.

Partial allocation recognizes this event complexity. Under partial allocation, only those situations (circumstances) that are expected to result in repayment of tax benefits in the foreseeable future on an aggregate basis are recorded as deferred tax liabilities. If repayment is not expected to occur, no tax allocation entry would be made. The type of relevant circumstance illustrated here is a *future contingency*. The question of the repayment of the tax benefits depends upon factors such as management's capital investment policy over a three to five-year period as well as possible changes in tax laws.

Another type of relevant circumstance arises in the case of foreign currency translation. In this type of event, operations of the subsidiary may or may not be integrated with the parent's operations, buying and selling activities may be primarily in the parent's currency or in the subsidiary's local currency, and cash flows may or may not be immediately available for remittance to the parent. In each of these situations, the first alternative denotes cases where circumstances have their primary impact upon cash flows in the parent's currency and the second alternative signifies circumstances where the subsidiary's local currency is primarily affected. The distinction among these circumstances concerns the determination of which monetary unit should be considered the "functional" or primary financial accounting currency.⁸

The question of whether operations of a foreign subsidiary have their primary impact in the subsidiary's local currency or the parent's currency affects the amounts and timing of the enterprise's cash flows through factors such as exchange rate differentials, differing rates of inflation between currencies, and the timing of currency transferrals to the parent, as discussed in SFAS No. 52. Hence the determination of the functional currency is a relevant circumstance. However, the functional currency type of relevant circumstance differs in one important respect from the repayment of the tax benefits type of relevant circumstance discussed previously. While the choice

of functional currency may not always be intuitively obvious, the criteria underlying relevant circumstances in the functional currency situation are known at financial statement dates and are not dependent upon future factors. As a result, the functional currency choice in the foreign currency translation event is designated as a *present magnitude*.

The presence of relevant circumstances, difficult though they may be to identify, leads to the formulation of two possible types of uniformity as well as an opposite situation called flexibility:

Rigid uniformity means mandating the use of a single accounting method for a particular accounting event category.

Finite uniformity means attempting to equate prescribed accounting methods with relevant circumstances within an event category.

Flexibility occurs within simple event categories where more than one accounting method exists and in complex event categories where a free choice exists among accounting methods.⁹

Rigid Uniformity

Research and development (R&D) costs have two general outcomes: these efforts can be successful, leading to increasing future cash flows, or they can fail. R&D costs are thus a complex event. Prior to SFAS No. 2 firms could either capitalize or expense these costs, as they desired. Therefore, this was a situation of flexibility. SFAS No. 2 required one accounting treatment: immediate expensing of all R&D costs. This is a classic example of rigid uniformity being prescribed for a complex event. The FASB's reasons probably centered around difficulty predicting the future cash flows (a future contingency), conservatism, and perhaps agency theory since management would have control over the capitalize versus expense decision.

Finite Uniformity

Oil and gas accounting is a complex event category. Drilling for oil can lead to either dry holes or gushers. Prior to SFAS No. 19, either full costing or successful efforts could have been used without any real criteria of selection relative to underlying relevant circumstances such as whether costs incurred would or would not contribute to the discovery, development, and production of oil or gas. In effect, a situation of flexibility had been present. Adding further to the confusion was the fact that several variations of both full costing and successful efforts were used in practice.

The difference between full costing and successful efforts is largely a problem of cost center determination, which is really, in turn, a question of asset definition.¹⁰ Under full costing, a country or even a continent could be considered to be a cost center. Thus under full costing, many costs are amortized over significant periods of time which clearly do not contribute in any meaningful sense to future cash flows. Under successful efforts a geological cost center is defined and contribution of cost to future cash flows must be demonstrated.

By opting for successful efforts over full costing and requiring that capitalization be linked with the probability of future cash inflows, SFAS No. 19 employed finite uniformity. It is also important to note that in selecting successful efforts to the exclusion of full costing, the FASB defended its choice on the grounds of consistency and comparability of financial data.¹¹ Interestingly, political forces resulted in the promulgation of SFAS No. 25 which indefinitely suspends the effective date of SFAS No. 19, and the condition of flexibility prevails today. Improvements upon successful efforts – if they can be implemented with a high degree of reliability – should be welcomed because the method provides a useful employment of finite uniformity.¹²

Flexibility

Inventory methods such as LIFO, FIFO, and weighted average are based upon assumed inventory flows. These inventory flow assumptions are not directly related to the timing or incidence of cash flows yet each of them is acceptable. They are merely allocation conventions. Of course the use of LIFO for tax purposes requires that LIFO also be used for financial reporting in the United States. Holding aside the issue of mandated reporting, inventory accounting provides an example of flexibility. If LIFO financial reporting were not required by law where LIFO is used for tax reporting, the accounting theory issue would involve income tax allocation rather than inventory accounting.

Formulating Accounting Policy

Given the above definitions of uniformity (as well as that of flexibility), and that increased harmonization is a desired goal, the following policy recommendation is advocated for national standard-setting organizations for the various event categories: *if relevant circumstances can be distinguished and implemented in a cost-effective manner, finite uniformity should be implemented; if, on the other hand, the event category is either a simple event or a complex event in which finite uniformity cannot be instituted in a cost-effective fashion, rigid uniformity should be implemented.*¹³ If this policy recommendation were utilized by national standard-setting bodies, the degree of harmonization would be increased as would comparability on both a national and an international basis.¹⁴ A schema of this policy recommendation is shown in Exhibit 1.

While the restrictive nature of rigid uniformity may appear to decrease comparability, we believe that the use of rigid uniformity with the policy advocated here would increase comparability. In SFAC No. 2, reliability is a function of two characteristics: verifiability (in the statistical sense involving the degree of consensus among measurers) and representational faithfulness. The latter is defined as "... correspondence or agreement between a measure or description and the phenomenon it purports to represent."¹⁵ Under historical costing representational faithfulness cannot be attained in an absolute sense for assets, such as inventories and plant and equipment. However, it might be possible to attain degrees of representational faithfulness within a historical cost context. For example, fixed assets expected to be intensively utilized

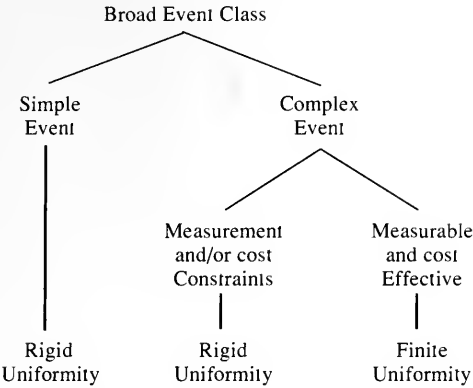


Fig. 1. Structure of uniformity considerations for standard-setting organization.

in the earliest years of life would have a more faithful representation of depreciation expense by means of accelerated depreciation over the expected economic life than by means of straight-line depreciation over a longer period. Representational faithfulness under historical costing is thus a satisficing concept and standard-setters clearly operate under conditions of bounded rationality.¹⁶

Given this interpretation of representational faithfulness, a higher degree of verifiability would improve reliability. This would occur in simple event situations where flexibility presently exists, and in complex event categories where either flexibility exists or alternative accounting methods cannot be implemented in a cost effective manner.¹⁷ Uniformity analysis can contribute here through elimination of undesirable accounting alternatives.

Furthermore, SFAC No. 2 largely views comparability as a function of relevance and reliability.¹⁸ Thus improving reliability by eliminating unwarranted alternatives – as long as representational faithfulness is not adversely affected – should improve comparability.¹⁹

In the next section we attempt brief analyses of several difficult event categories using the definitions and policy recommendations developed in this section.

Some Examples of Uniformity Analysis

In this section we analyze seven events using the concepts developed in the previous section: inventory acquisition and consumption, leases, the investment tax credit, in-substance defeasance, income tax allocation, and depreciation. In this order we go from simple events to complex events first with present magnitudes and then with future contingencies. The analysis is intended to be illustrative of how events may be viewed in a manner which could lead to both increased harmonization as well as standards which are more relevant from the economic perspective within a historical costing context.

Inventory Acquisition and Consumption

Acquisition of goods for resale is a simple event and accounting for purchase of merchandise correctly follows a rigid uniformity perspective. All costs pertaining to acquisition of goods including transportation are charged to inventories. If property is exchanged for merchandise inventory, the nature of the event is still simple. Fair market value of the asset given up forms the basis of value for the asset received if a cash cost for the inventory is not available. The event is still simple even if a gain or loss arises due to market value of the inventory received and property given up not being equal.

Consumption of raw materials and merchandise inventories generally requires replacement. The assumed inventory flows in historical cost accounting have nothing to do with either the replacement process or the economic value of assets consumed. Historical cost inventory flow assumptions such as LIFO, FIFO, and weighted average have no linkage to economic circumstances and are arbitrary allocations. Of course, the inventory case is intertwined with income tax considerations. With no relevant circumstances present, inventory usage is a simple event. Therefore, rigid uniformity – holding aside the tax problem arising from the use of LIFO in the United States – would be more desirable from the standpoint of uniformity analysis than the flexibility that now exists.

Leases

The dichotomy of leasing arrangements into operating and capital leases indicates a complex event. Leases where title passes to the lessee at the end of the lease period and leases containing bargain purchase options are quite similar to conditional sales where title passes when final payment is made. Lease capitalization appears to be totally appropriate in these situations.

The criterion whereby capitalization is required if the present value of future lease payments equals or exceeds 90% of the fair market value of the asset appears to be a carry-over from the “material equity” approach of Accounting Principles Board (APB) Opinion No. 5. The “either-or” dichotomy of the 90% rule is an attempt to capture the cash flow implications of the leasing arrangement but appears to be a rather blunt instrument for distinguishing between operating and capital leases. Of even more concern is the 75% rule of SFAS No. 13. If an asset is being leased for 75% or more of its estimated economic life, it is a capital lease. If, on the other hand, the asset is being leased for less than the 75% period, it is an operating lease (provided no other capitalization criteria apply). The 75% rule is a present magnitude even though it contains a future aspect: estimating the economic life of the property. While it may be the case that a longer lease period may lead to a lower annual cost than a shorter one, it is not clear from the standpoint of cash flow analysis why this differentiation should occur at the 75% point. It is more likely that the selected relevant circumstance, percentage of life leased, would have a gradual effect upon the annual lease cost throughout the percentage range of economic life leased, hence it is not an effective mechanism for differentiating between members of the class. From a relevant circumstances standpoint, the 75% rule for lease capitalization is a

questionable criterion for distinguishing between operating and capital leases because it does not provide a discrete vehicle for determining cash flow differentials of alternative circumstances. One possibility might, therefore, be the capitalization of all long-term leases because relevant circumstances cannot be reliably differentiated.²⁰

Investment Tax Credit

The investment tax credit is no longer in effect in the United States but it provides an interesting example of event complexity. It is a complex event because of the potential presence of unused investment tax credits which might be realized in the future. In the great majority of cases, however, these potential future benefits did not exist because the entire cash flow effect was felt in the year of acquisition of eligible capital assets resulting in a lower income tax liability. However, two approaches were allowed even where unused investment tax credits were not present: immediate recognition of benefits (flow-through) in the year of acquisition or allocation of benefits over the life of the asset. This was clearly a situation of flexibility.²¹

Uniformity analysis suggests that only one method should be allowed in the absence of unused investment tax credits. Furthermore, a much stronger case can be made for flow-through because all of the cash flow benefits arise when capital acquisition occurs. A separate transactions orientation exists between the acquisition of the asset, which should lead to future benefits, and the tax reduction from the investment tax credit, which does not give rise to future benefits.

Where unused investments tax credits are present, Paragraph 16 of APB Opinion No. 2 states that these benefits should “ordinarily” be recognized as income only in the year when the income tax reductions are actually realized. Uniformity analysis would suggest a finite uniformity solution, charging an asset – probably a deferred investment credit receivable – and reducing income tax expense in the year of asset acquisition if these benefits are expected to be received and ignoring them, unless and until actually received in a later period, if realization is not expected to occur. Issues of verifiability, conservatism – and possibly agency theory – appear to underlie the APB’s apparent rigid uniformity choice (except for the insertion of “ordinarily”).

In-substance Defeasance

SFAS No. 76 deals with the linkage between certain investment transactions and existing long-term liabilities by means of an irrevocable trust mechanism. The question concerns whether debt can be extinguished by placing in an irrevocable trust, investments that are essentially risk free relative to amount, timing, and collection of both interest and principal.

The principal argument against extinguishment is legal in nature because “... the debtor is not legally released from being the primary obligor under the debt obligation”.²² However, the lock-in effect provided by the irrevocable trust combined with the essentially risk-free nature of the monetary assets in terms of amount, timing, and collection of interest and principal virtually guarantees that real cash flow savings – hence a real economic gain – will occur. Moreover, SFAS No. 76 states that if the risk free securities can be paid prior to scheduled maturity, they are

not risk free relative to timing, and thus would not result in a defeasance of debt. Hence, the uncertainty of the timing (and thus amount) of the cash flows if securities can be paid prior to maturity militates against extinguishment. In-substance defeasance involves a future contingency: amount, timing, and collection of interest and principal of monetary assets held in an irrevocable trust. Circumstances in which extinguishment is allowed rest upon economic substance rather than legal relationships. The question of whether offset should be allowed falls into the finite uniformity category, and SFAS No. 76, we believe, has appropriately applied it.

Income Tax Allocation

The nature of income tax allocation as a complex event and the relevant circumstance that applies to it – whether future tax payments or receipts will be realized – was previously discussed. Specifically, the discussion was couched in terms of accelerated depreciation for tax purposes and a less accelerated approach for book purposes. Under comprehensive allocation in SFAS No. 96 (except where conservatism prevents recognition of deferred tax assets) and in its predecessor, APB Opinion No. 11, allocation must be employed for temporary (timing) differences whether or not excess tax benefits arising from the employment of accelerated cost recovery system (ACRS) charges in excess of straight-line depreciation are expected to be repaid or indefinitely deferred. However, the incidence or timing of cash flows is, of course, affected if excess tax depreciation benefits are expected to be repaid or are to be indefinitely deferred, on the assumption that ACRS benefits from new capital asset acquisitions would block repayment of previous ACRS benefits. Comprehensive allocation, then, is an example of rigid uniformity.

Partial allocation, mentioned previously, accords with finite uniformity. If repayment is expected to occur, tax allocation is employed. If repayment is expected to be indefinitely deferred due to new fixed asset acquisitions, tax allocation is not utilized. It should be noted that an important agency problem arises in the case of the relevant circumstance, which serves as the basis for an alternative accounting treatment (the recording of a liability if and only if a repayment of tax benefits were anticipated). Recording the liability would also increase tax expense and reduce income. Management's desire, however, might be to increase income or minimize debt/equity ratios. Thus, predicted short-run repayment might be ignored in order to benefit the present year's income or reported financial position.

From the standpoint of uniformity analysis, the type of rigid uniformity imposed by SFAS No. 96 (with conservatism affecting the recognition of some deferred tax assets) is difficult to justify. While partial allocation would recognize the relevant circumstances that are present, the agency problem as well as verifiability problems relative to estimating future repayments are serious difficulties. A theoretically palatable solution might be to utilize comprehensive allocation with discounting. The discounting process, of course, comes to grips with the timing problem relative to cash flows. Verifiability problems, unfortunately, still remain in terms of predicting exactly when these future cash flows will materialize. On balance, we believe that the benefits of discounting exceed the costs and mandating this approach (an application of rigid uniformity) may be optimal in this complex event situation.

Depreciation

Depreciation, particularly in a historical cost context, is an allocation problem which is presently not very satisfactory from the perspective of comparability. Powell very cogently noted that different managerial policies can lead to different usage patterns of fixed assets which in turn should justify different depreciation methods.²³ Different possible usage patterns of depreciable fixed assets could easily influence different incidence, amounts, or timing of cash flows. Thus, relevant circumstances – in the form of future contingencies – do exist. In actual practice, depreciation accounting provides an example of flexibility because choice among the various depreciation methods is a virtual free choice by management which is unfettered by the estimated pattern of usage or any other potential underlying circumstance.

Though possible, it would be extremely difficult to implement a finite uniformity approach for depreciation accounting because virtually every fixed asset situation is totally unique. A modified rigid uniformity approach might be more fruitful. Particular methods could be specified for broad asset categories by either type or industry. Examples might be all types of oil drilling equipment or all capital goods in the steel industry. These depreciation classifications could also contain allowable ranges for economic life and salvage value. While this solution is far from optimal, it would be an improvement from the standpoint of comparability over the present system of flexibility.

The analysis of the event categories analyzed in this section are summarized in Table 1.

Impediments to Uniformity Analysis and Harmonization of Accounting Standards

It should be clear that the uniformity approach to harmonization is not an attempt to institute a system of optimal accounting standards in one or more nations. By means of eliminating unwarranted alternatives and adhering to the criteria of relevant circumstances for allowing different alternatives in broad event categories, the system is one which satisfies rather than endeavoring to optimize. There are limitations relative to applying uniformity analysis. Furthermore, nationalism and cultural differences, which will be briefly discussed, present difficulties relative to achieving harmonization. We commence by noting some of the problems and conditions affecting the standard-setting environment.

Many institutional problems and deficiencies beset the standard-setting process in the United States and many other countries of the Western world. These problems have been well defined in the financial accounting literature. They include actual and perceived economic consequences of accounting standards arising in an agency setting, heterogeneity of user information needs occurring in a “free rider” market context, the politics of the standard-setting process (arising from the economic consequences problem), and a perceived efficient market for financial information

Table 1. Examples of Uniformity Analysis

Event Category	Type of Event	Present Situation	Type of Circumstance	Policy Recommendation
Inventory acquisition	Simple	Rigid uniformity	—	None needed
Inventory consumption	Simple	Flexibility	—	Rigid uniformity (to the extent the law will allow)
Leases	Complex	Finite uniformity	Present magnitude	Finite uniformity difficult to employ. Capitalization of all long-term leases preferred
Investment tax credit	Complex	Flexibility (accrual or flow-through under APB Opinion No. 2). Unused investment tax credits ordinarily recognized only in the year when realized	Future contingency	Flexibility not warranted where unused investment credits are not present. Benefits arising in the year of asset acquisition should be credited to income tax expense. Charge unused deferred investment tax credits receivable if there is a high probability that they will be realized. Otherwise wait until actual realization occurs
In-substance defeasance	Complex	Finite uniformity	Future contingency	Actual realisation occurs Finite uniformity of SFAS No. 76 justified
Income tax allocation	Complex	Rigid uniformity (comprehensive allocation under SFAS No. 96)	Future contingency	Comprehensive allocation with discounting (rigid uniformity) preferred to partial allocation (finite uniformity)
Depreciation	Complex	Flexibility due to free choice among depreciation methods	Future contingency	Modified rigid uniformity with specifications determined on industry basis

in which the net benefits of disclosure exceed in value the setting of accounting standards for financial reporting.²⁴ Despite this extremely complex environment, uniformity analysis falls into a sphere of accounting thought which emphasizes commonality of user information needs and a more disciplined approach to the standard-setting process.²⁵

The FASB itself, as a standard-setting body, has come under severe attack from business on the grounds of concocting standards that are costly to implement and difficult for users to understand. Uniformity analysis might be able to ease these tensions. However, the limitations of uniformity analysis should be understood.

Limitations of Implementing Uniformity Analysis

Uniformity analysis is not a panacea for financial accounting. Numerous problems and issues must be carefully considered before attempting implementation. While

several examples have been presented in previous sections of this paper, it is not clear that differential cash flows – in terms of incidence, amounts, or timing – can always be identified and associated with different circumstances in broad event classifications.

Even if relevant circumstances can be conceptually distinguished, there may be difficulties in application. The agency problem relative to the possible repayment of excess tax benefits has already been discussed. Present magnitudes may not always be simple in terms of application, either. For example, in the broad event category of ownership of common stock in other firms for purposes of control, a high degree of ownership would indicate more control over the investee's policies than would a low degree of ownership. The difference in control over the investee's policies could be expected to influence future cash flows accruing to the investor. As a result, this line of thinking may well underlie differences in accounting for investments in other firms reflected in either full consolidation, the equity method or the cost method. The FASB itself recognized the fuzziness of percentage of stock owned as a proxy for degree of control, when it noted in Interpretation No. 35 that the 20% demarcation point between the cost and equity methods is to be construed as only a guideline rather than an inviolable rule. Hence, judgment certainly cannot be dispensed with, even in the case of present magnitudes. The case of stock ownership percentages and the 75% rule in leases, both of which are present magnitudes, illustrate that continuous characteristics such as percentages do not serve well as a criterion for employing different accounting alternatives which are themselves discrete in nature.

While uniformity analysis provides a promising possibility for improving comparability, institutional and technical problems provide a cautionary note. In the final analysis, it becomes a benefits versus cost question. One thing, however, should be clear. Intelligent application of uniformity analysis and its employment in the setting of accounting standards will not lead to a so-called "cook book" of accounting rules. Auditors will still need to employ extensive amounts of judgment, independence and integrity.

Even if there were no problems relative to implementing uniformity analysis, impediments to increasing harmonization would still exist. Much has been made of differences among nations and groups in terms of underlying differences relative to accounting standards and financial reporting practices. Differences have been proposed along lines including economic dimensions, the nature of the accounting function, cultural dimensions, and the nature of financial markets and the legal systems.²⁶ We briefly examine the situation of nationalism and cultural problems in relation to harmonization.

Nationalism

Nationalism in the context of harmonization refers to standard-setting agencies in the various countries attempting to maintain independence and sovereignty relative to the drafting of accounting standards. While the problem of nationalism should not be underestimated, we do not believe this presents quite as serious a problem as might have been the case a generation ago. The continuing growth in international

trade, cross-border financing and, in particular, the growing power and importance of multinational firms contribute to the need for increasing interdependence and cooperation. Newer developments may be even more important. The emergence of the European Community (EC), the end of the Cold War, and the dissolution of the Soviet Union may lead to greater cooperation among national standard-setting bodies even though they still maintain independence and autonomy. At the least, improved harmonization within regional blocs, such as the EC, the North American group, and the Pacific Rim countries, can be expected. Whether this will increase harmonization outside of the regional grouping is open to question. There are signs that harmonization within the EC may counter the development of worldwide harmonization.²⁷

The International Accounting Standards Committee (IASC) is an obvious harbinger of increasing harmonization, particularly since the appearance of Exposure Draft 32.²⁸ The success of the IASC may be grounded in the relationship between itself and the various national standard-setting bodies. If a cooperative relationship results, a significant increase in the degree of harmonization and the concomitant quality of standards could result, particularly if one or more national standard-setting organizations were using a meaningful approach to uniformity analysis. However, national standard-setting agencies might become lobbyists for their local constituencies if the IASC were to become the principal generator of financial accounting and reporting standards.²⁹

Some questions, however, have been expressed relative to the ability of the IASC to bring about harmonization. Rivera discusses the lack of synchronization of national standards with the IASC, an over-reliance of the IASC on American and British models, and very limited mention of departures from IASC standards in audit reports.³⁰

Cultural Differences

Culture embodies factors such as similar social understanding, values, beliefs, and symbols, shared by the members of a particular culture.³¹ Cultural differences may be more intractable than nationalistic ones.³² For example, in the United States, leases are analyzed from an economic standpoint resulting in the dichotomy of capital leases and operating leases. However, in many countries, legal form takes precedence over economic substance. Most firms in France, for instance, do not capitalize any leases or even make any disclosure of lease commitments.³³

While many cultural differences exist among well-developed nations, differences can be extremely pronounced between technologically advanced countries and less well-developed states. These include differences among financial institutions and arrangements and the structure of the accounting establishment including how, if at all, accounting standards are promulgated. One positive sign, however, relative to harmonization, is that at least ten developing nations, have either adopted IASC standards as their own or used them as a basis for developing their own standards.³⁴

Nationalism and cultural differences are important factors but they are by no means impossible obstacles on the road to improved financial reporting and increasing harmonization.

Summary

Harmonization of accounting standards could be improved by means of uniformity analysis at the national level by implementing the following program:

- (1) Eliminate flexibility existing in simple event situations by instituting rigid uniformity.
- (2) Use rigid uniformity in complex event situations where (a) relevant circumstances cannot be easily identified or measured with acceptable verifiability or (b) alternative accounting methods cannot be implemented in a cost-effective manner.

Uniformity analysis does not provide a quick fix or panacea relative to improving accounting standards. Instead, it provides a working tool which could help standard setters in increasing the pace and improving the quality of harmonization. It could also result in standards which provide greater usefulness from the standpoint of comparing and evaluating operations and financial position of enterprises where historical costing is the primary method used in financial reporting.

Cultural differences and nationalism, particularly the former, present difficulties in bringing about harmonization of accounting standards through uniformity analysis (or by any other means, for that matter). One key factor will be how the IASC works with national standard-setting organizations, particularly in light of the former's comparability (uniformity) project. Additional impediments to harmonization include factors such as user heterogeneity, economic consequences of accounting standards, the politics of the standard-setting process in most nations, and the fact that financial reporting occurs within an agency setting. Nevertheless, we believe that uniformity analysis is a tool which could be profitably utilized by standard setters for increasing the comparability of financial statements and improving the process of harmonization of financial accounting standards.

Notes

1. Dennis R. Beresford, "Internationalization of Accounting Standards: The Role of the Financial Accounting Standards Board." *Status Report* (June 27, 1988), 3–6.
2. Leo G. Van der Tas, "Measuring Harmonization of Financial Reporting Practice." *Accounting and Business Research* (Spring 1988), 157–169.
3. This definition is similar to Doupnik's definition. See Timothy S. Doupnik, "Evidence of International Harmonization of Financial Reporting." *International Journal of Accounting* (Fall 1987), 47.
4. Three examples that conform closely to this idea are Arthur R. Wyatt, "Professionalism in Standard-setting." *CPA Journal* (July 1988), 20; Robert Sprouse, "The Importance of Earnings in the Conceptual Framework." *Journal of Accountancy* (January 1978), 71; and David Solomons, *Making Accounting Policy* (New York: Oxford University Press, 1986), 102–104.
5. *Statement of Financial Accounting Concepts No. 6: Elements of Financial Statements* (FASB, 1985), 46–47.
6. Gary Cadenhead, "Differences in Circumstances: Fact or Fantasy?" *Abacus* (September 1970), 79.
7. Shyam Sunder, "Limits to Information." *Accounting Research Convocation* (University of Alabama, 1983), 103.
8. For more on the functional currency issue see *Statement of Financial Accounting Standards No. 52: Foreign Currency Translation* (FASB, 1981), 3–5 and 46–48, particularly paragraph 84 on 47–48.

9. This trichotomy evolves from concepts introduced in Harry I. Wolk, Jere R. Francis, and Michael G. Tearney, *Accounting Theory: A Conceptual and Institutional Approach* (Cincinnati: South-Western Publishing Co., 1992), 225-240. The popular conception of uniformity is restricted to rigid uniformity. We believe that improving financial accounting standards and increasing the degree of harmonization requires the linkage of rigid and finite uniformity.
10. Dopuch and Sunder in their discussion of oil and gas accounting noted that the FASB's conceptual framework defined the word "assets" in a manner in which the characteristics denoting assets were necessary but not sufficient. Nicholas Dopuch and Shyman Sunder, "FASB's Statements on Objectives and Elements of Financial Accounting: A Review," *Accounting Review* (January 1980), 4 and 7.
11. *Statement of Financial Accounting Standards No. 19: Financial Accounting and Reporting by Oil & Gas Companies* (FASB, 1977), 84.
12. Successful effort is not without its faults. Several dissenters advocated an area-of-interest approach in which acquisition, exploration, and development costs where proven reserves are discovered would be capitalized. If reserves were not found, write-off would occur. In addition, inconsistencies of capitalization under successful efforts relative to exploratory dry holes were also noted in the dissent. *Ibid.*, 32-33.
13. A uniformity system having more "hardness" would restrict relevant circumstances just to present magnitudes. Ijiri defines hardness as a quality where the measure cannot easily be manipulated and it would be difficult for individuals (measurers) to disagree. Ijiri also makes the following statement relative to hardness: "Alternative rules may be necessary to cover different circumstances in order to reflect most ideally the degree of goal achievement in each respective situation. However, it is essential to specify the conditions under which each alternative is applicable so that under a given situation, one and only one of the alternatives is considered to be legitimate." Yuji Ijiri, *Studies in Accounting Research #10: Theory of Accounting Measurement* (Sarasota: American Accounting Association, 1975), 36.
14. The uniformity categories discussed here constitute a system for accounting policy formulation. Somewhat similar concepts have been presented by AlHashim and Arpan without the cash flow orientation for accounting event analysis. *Absolute uniformity*, in their terminology, refers to one set of accounting methods and reports even where different circumstances or user needs are present. This corresponds fairly closely to rigid uniformity. *Circumstantial uniformity* prescribes "...different accounting methods... for varying economic facts under different conditions..." It is thus fairly close to finite uniformity. Finally, *purposive uniformity* goes a step beyond circumstantial uniformity because it takes into account both different circumstances and different user purposes or needs. Dhia D. AlHashim and Jeffrey S. Arpan, *International Dimensions of Accounting* (Boston: PWS-Kent Publishing Co., 1988), 42-46.
15. *Statement of Financial Accounting Concepts No. 2: Qualitative Characteristics of Accounting Information* (FASB, 1980), 27.
16. Sterling's position on representational faithfulness differs from the relative position presented here. In his view, representational faithfulness must be indicative of real phenomena. Thus, historical costing could not be construed as having this characteristic in regard to real assets and their expiration. Robert R. Sterling, *An Essay on Recognition* (Sydney: Accounting Research Centre of the University of Sydney, 1985), 21-22 and 26-30.
17. See the discussion of depreciation in the next section, for example.
18. The Concept does take the position that comparability may be improved while relevance or reliability is weakened. The context of this statement appears to apply to situations where rigid uniformity is being utilized instead of finite uniformity. *Statement of Financial Accounting Concepts No. 2: Qualitative Characteristics of Accounting Information* (FASB, 1980), 47.
19. This position accords quite closely to the position taken by Ijiri and Jaedicke in their classic paper. Reliability is a function of verifiability (as that term is used here and in SFAC 2) and bias. Bias is simply the closeness of the numbers to the perceived correct value as used in the predictive sense. Comparability per se is not mentioned by them. Yuji Ijiri and Robert K. Jaedicke, "Reliability and Objectivity of Accounting Measurements," *Accounting Review* (July 1966), 474-483.
20. Another possibility might be mandating capitalization only where title passes at the end of the lease period or where a bargain purchase option is present.
21. The investment credit was the subject of a well known political battle which resulted in the present situation of flexibility. For further details, see Maurice Moonitz, "Some Reflections on the Investment Credit Experience," *Journal of Accounting Research* (Spring 1966), 47-61.
22. From the dissent in *Statement of Financial Accounting Standards No. 76: Extinguishment of Debt* (FASB, 1983), 5.
23. Weldon Powell, "Putting Uniformity in Financial Accounting into Perspective," *Law and Contemporary Problems* (Autumn 1965), 681.
24. For an excellent analysis of these developments from a perspective in which both the standard setters and users must make normative decisions, see Philip W. Bell, "Accounting as a Discipline for Study and

- Practice." *Contemporary Accounting Research* (Spring 1987), 338–367. For a re-evaluation of the efficient markets hypothesis see Simon Keane, "The Efficient Market Hypothesis on Trial." *Financial Analysts Journal* (April 1986), 58–63.
25. For a discussion involving commonality of user information needs see Michael J. Aitken, "A General Theory of Financial Reporting: Is it Possible?" *International Journal of Accounting* (Vol. 25, Number 4, 1990), 221–233.
 26. Some examples would be Frederick Choi and Gerhard Mueller, *International Accounting* (Englewood Cliffs: Prentice-Hall, 1984), Chapter 2; Sidney J. Gray, "Towards a Theory of Cultural Influence on the Development of Accounting Systems Internationally." *Abacus* (April 1988), 1–15; C.W. Nobes, "A Judgmental International Classification of Financial Reporting Practices." *Journal of Business Finance and Accounting* (Spring 1983), 1–19; M.H. Perera, "Towards a Framework to Analyze the Impact of Culture on Accounting." *International Journal of Accounting* (Vol. 24, No. 1, 1989), 42–56; Gert Hofstede, "The Cultural Context of Accounting." *Accounting and Culture* (American Accounting Association, 1987), 1–11; C.W. Nobes, "Classification of Financial Accounting Practices." *Advances in International Accounting* (Vol. 1, 1987), 1–22.
 27. See S.E.C. Purvis, Helen Gernon and Michael Diamond, "The IASC and Its Comparability Project: Prerequisites for Success." *Accounting Horizons* (June 1991), 37 and 40.
 28. However, in attempting to achieve comparability by means of eliminating allowable alternatives in many event categories, this exposure draft appears to be ignoring relevant circumstances.
 29. S.E.C. Purvis, Helen Gernon, and Michael Diamond, op. cit., p. 37.
 30. Juan M. Rivera, "The Internationalization of Accounting Standards: Past Problems and Current Prospects." *International Journal of Accounting* (Vol. 24, No. 4, 1989), 320–342.
 31. M.H. Perera, op. cit.
 32. Cultural differences and nationalism are not mutually exclusive. For an extensive discussion of cultural differences see Desmond McComb, "The International Harmonization of Accounting: A Cultural Dimension." *International Journal of Accounting* (Spring 1979), 1–16 and Desmond McComb, "International Accounting Standards and the EEC Harmonization Program: A Conflict of Disparate Objectives." *International Journal of Accounting* (Spring 1982), 35–48.
 33. Thomas G. Evans, Martin E. Taylor, and Oscar Holzmann, *International Accounting and Reporting* (New York: Macmillan Publishing Company 1985), 34.
 34. S.E.C. Purvis, Helen Gernon, and Michael Diamond, op. cit., 28–29.

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European Unification, Accounting Harmonization, and Social Disclosures

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Abstract: *The move toward commonality in the European Community (EC) has encouraged the harmonization of financial accounting procedures and statement disclosures. One area of reporting differences that has not been addressed in the unification process is that of social disclosure. This paper reports the results of a comparative analysis of annual reports for selected European firms. The study was conducted to determine the degree to which social disclosures have been made in the EC. Not surprisingly, the results show major between-country and within country variability in the extent and quality of social reporting.*

The European Community (EC) has been attempting to narrow the differences in financial statement reporting of companies in member nations. Both the fourth and the eighth directives have been promulgated to help with this endeavor. With the time set for EC unification at hand, there is some question as to how successful these nations will be in achieving uniformity of financial statement reporting.

One source of difference that is wholly ignored by the directives is the area of social reporting. Only the politically unacceptable Vredeling Proposal has dealt with information generation of this type. These disclosures, which include information of companies' relationships with the broad range of stakeholders, tend to be voluntary statements that vary not only among countries but also within countries.

A number of studies have shown that information provided by social disclosures is useful for stakeholders. Unfortunately, a potential consequence of the EC's disregard for these disclosures may be a variation of Gresham's law. That is, firms that do not disclose will serve as the model for future disclosure (or, poor disclosing drives out good disclosing).

In this study, a comparative analysis is made of the current level of social disclosure within and between companies of each of the 12 member EC nations. Financial reports are reviewed to highlight the similarities and differences in social disclosures based on content analysis. Included as part of this analysis are possible future scenarios for social reporting in a unified EC.

The paper is structured as follows: first, a review of pertinent social reporting literature is presented; second, the methodology used to analyze the disclosures is explained; third, the results are presented and analyzed; finally, alternative scenarios are provided and a conclusion is drawn.

Selective Overview of the Literature

The literature on social disclosure tends to focus on two issues: (1) why companies choose to make these disclosures: and (2) whether anybody uses the information for decision-making. A good portion of the literature on the reasons for making these disclosures was summarized by Ullmann.¹ The conclusion drawn there was that the reasons for making social disclosures have not as yet been demonstrated satisfactorily. Guthrie and Parker² provide two competing hypotheses as to the justification for making social disclosures. The "user utility model" is based on the demands of stakeholders. That is, corporate interest groups demand certain information and, based on the corporate perception of the demand for the information, the appropriate social disclosures are provided. Unfortunately, this hypothesis fails to explain why large companies from the same industry that operate in the same country make differential social disclosures. Is there any great difference, for example, between the stakeholders of EXXON and Texaco?

The second hypothesis proposed by Guthrie and Parker is termed a "political economy." According to these authors, accounting reports serve as social, political, and economic documents. Rather than reacting to the pressure to provide information applied by special interest groups, corporations produce information that serves corporate political and ideological goals. Thus, social disclosures can be perceived as furthering the self-interest of the entity, as Macintosh³ and Cooper and Sherer⁴ have argued similarly in discussing social disclosure production. Since corporations have various agendas, ideologies, and goals, the political economy hypothesis does explain differential disclosures by companies in the same industry facing the same constituencies.

It is probable that there is no single motivation for making social disclosures. Social disclosure, for the most part, is a function of the attitude of top management towards its stakeholders. Whether there is an economic motivation for the disclosure (as some of the studies that Ullmann cites claim), a reaction to user needs (as proposed by Guthrie and Parker), or a political motivation (as suggested by Arnold⁵), is probably a consequence of each management's particular perception of the world it faces.

The problem as far as social disclosures made by EC companies is that, if in the move towards uniformity of financial reports firms from a majority of the countries do not perceive a need to make these disclosures, the reporting technique may become extinct. Since demand to produce these disclosures may no longer be driven by

national stakeholder groups or perceived reactions to regulators because of the diffusion caused by the larger reporting community, corporations may elect not to disclose.

The lesson learned from the aborted attempt by the EC's European Commission for Social Affairs and Employment to strengthen disclosure regarding multinational corporate undertakings is worth reviewing in this regard. As the analysis by DeVos⁶ has made abundantly clear, internal and/or nationalistic influences are difficult to overcome in developing community-wide directives with respect to social affairs. The relatively mild disclosure proposals contained in the Vredeling Initiative were shelved for pure political reasons – without consideration of either corporate or workers' views.

There are a number of studies that document the use made of social disclosures by financial statement readers in making decisions. Studies include those by Belkaoui,⁷ Anderson and Frankle,⁸ Jaggi and Freedman⁹ and Shane and Spicer.¹⁰ However, all of these studies focus on only one constituent group—investors. That investors are a source of demand for social disclosures certainly makes it easier to justify including these disclosures in financial reports. The problem is that some of the disclosures have important implications for other stakeholders, and, since a demand has not been documented, these disclosures may not be made. As an example, employees form another constituent group for which the demand has been demonstrated (see, for example, Schreuder,¹¹ Brockhoff,¹² and Dierkes,¹³). Some EC countries have reacted to this demand (notwithstanding the Vredeling Proposal defeat). Cooperative management efforts by labor and owners are fairly common in Belgium, France, and Germany.

It would not be expected that reporting to a community of 12 nations instead of one will reduce the demand of either investors or employees for social information. Still, there is uncertainty as to the actual impact of EC unification on disclosure. It is possible that demand for this information from these groups may remain the same, but that the company, in the guise of improving the uniformity of disclosure with other EC companies, may choose to eliminate social disclosures. However, it is more probable that companies will continue to disclose at least as much social information as they have in the past. Therefore, it is useful to view, in a comparative framework, the baseline for member countries' social reporting.

Methodology

An analysis was made of the annual reports from companies in each of the 12 EC member nations. A sample of firms was chosen from companies included in *Moody's International*. Since manufacturing firms are most likely to have problems with pollution, product safety, and occupational safety and health (three of the major categories of social disclosure), the sample was based on selecting at least three manufacturing firms from each country. When *Moody's* included more than three manufacturing firms for a given country, the firms were selected randomly. When there were three or fewer, all firms were chosen. Unfortunately, Luxembourg had only service industries reported; three banks were chosen.

Table 1. Industries included in the study

Industry	Number
Oil	10
Pulp and paper	1
Autos	3
Chemicals	4
Tobacco	1
Heavy equipment	1
Cement	1
Metals and glass	2
Banks	1
Total	24

Twenty-four companies responded to a request for annual reports and any special reports that are made publicly available (including the French *Bilan Social*). The final sample included at least two annual reports from each country except Portugal, Luxembourg, and Greece, which had one each.

Table 1 shows a classification of the firms by industry. The resulting sample contains 23 firms from manufacturing industries that are all prone to having problems with pollution, occupational safety and health, product safety, and energy conservation.

Social Disclosure Content Analysis

Based on the method of content analysis developed by Freedman and Wasley¹⁴ to analyze social disclosure of US firms, a seven category content analysis was utilized for this study. These categories are:

- (1) community involvement (e.g., charitable contributions);
- (2) environmental protection (pollution disclosures);
- (3) consumer relations;
- (4) human resources;
- (5) energy conservation;
- (6) product safety;
- (7) occupational safety and health;

For each category of social disclosure, the content of that disclosure is analyzed using a four element index that attempts to assess the quality of the disclosure. These four elements are:

- (1) time frame (past, present, or future);
- (2) effect (significant or not);
- (3) monetary versus non-monetary;
- (4) reference to specific action, person, event, or place.

This method of content analysis focuses on each statement based on what is included in the statement rather than how much is said. Counting the number of lines or words included in the social disclosure does not convey the importance of the disclosure. The critical attribute is the meaning of the words. In that regard, the

social disclosures were scored by assigning a single point to each disclosure. If the report commentary involved future implications, or the disclosure was monetary, two points were given.

Research Questions

The small sample size (given the relatively large number of companies) greatly limits the empirical analysis. However, it is possible to draw some broad conclusions despite this limitation. There are two hypothesized expectations formulated for this study that deal with the differences in social disclosure. These are:

H₁: There is no difference in the level of social disclosure among companies from the 12 member nations of the EC.

H₂: There is no difference in the level of social disclosure made by companies within each EC member country.

If the null hypotheses are not confirmed, this implies that social disclosure is a function of both the headquarters country and the management of the company.

Results and Analysis

Of the seven categories of social disclosure, the firms included in this study provided disclosures about only four.

Table 2 indicates that there are differences in social disclosures made by companies from different countries. The differences are in both the total amount of disclosure and in the category of disclosure.

Overall, sample firms in France, Germany, the Netherlands, and the UK disclose the most social information. Denmark, Ireland, and Luxembourg companies disclosed no social information (it is to be remembered that the Luxembourg sample element is a banking institution). Based on the literature, for the most part, this is not a

Table 2. Average disclosure of country

Category of disclosure	Community involvement	Pollution	Human resources	Occupational safety and health	Total
Belgium	1.5	7	3	2	13.5
Denmark	0	0	0	0	0
France	0	0	30	30	60
Germany	0	10	18	4	32
Greece	0	4	5	4	13
Ireland	0	0	0	0	0
Italy	1.5	0	2.5	0	4
Luxembourg	0	0	0	0	0
Netherlands	2	7	15	3.5	27.5
Portugal	0	4	2	0	6
Spain	6.3	1.7	4.7	0.7	13.4
UK	12.7	2.3	5.3	5.6	25.9
Total	24	36	85.5	49.8	195.3

surprising result. The only surprise is that the Danish companies made no social disclosures, since Denmark has a reputation of encouraging social disclosure. However, since both companies are oil refineries, it is possible that the CEOs of these companies are not enthusiastic about social disclosure. Again, this may simply be a result of the small sample available for analysis.

The results by category of social disclosure are interesting. The UK seems to dominate disclosure concerning community involvement. However, this is because regulations require that charitable donations and political contributions be disclosed. Companies from Belgium, Italy, the Netherlands, and Spain all make voluntary disclosures of their charitable activities. Sample companies from Germany and France made no disclosures concerning community involvement.

Pollution disclosures are dominated by companies from Germany, with companies from the Netherlands and Belgium also making significant disclosures. These disclosures are all voluntary and many of the disclosures include information of actual pollution emissions. In the USA pollution information is a required disclosure in the annual report (Form 10-K) that is filed with the Securities and Exchange Commission. However, few firms, if any, disclose the actual amount of pollution emissions. Overall, the level of pollution disclosure made by the EC companies is much lower than companies from comparable industries in the USA. Since the companies included in the sample are all from industries that are major contributors to pollution in Europe (except for the Luxembourg bank), it is surprising that companies from Denmark, France, Ireland, and Italy do not disclose anything about their relationship with the environment.

The category of human resources disclosures also shows significant differences across countries. France dominates this disclosure category, with companies from Germany and the Netherlands making significant disclosures. As was the case with community involvement, the domination of France is due to regulations. French companies of a certain size are required to publish a *Bilan Social*, which is a social report of the firm's relationship with it, employees. As a matter of fact, except for the social report, French firms made no other social disclosures. Belgian companies, too, are well known for their strong participative workers councils from which much information impacting the consultative rights of employees flow. Disclosures made by companies from Germany and the Netherlands were voluntary, as were all the other disclosures in this category. Except for companies from Denmark, Ireland, and Luxembourg, some disclosure was made by companies from all the countries in the EC.

The last category deals with occupational safety and health disclosures. These disclosures are also included in the *Bilan Social*, so French firms once again dominate. Disclosures in this category include both good and bad news. That is, firms report not only their decrease in accident and death rates, but also the number of accidents and fatalities in a given year. Voluntary reporting of these disclosures was done by firms from Germany, Greece, the United Kingdom, the Netherlands, and Belgium. With the possible exception of the Luxembourg bank, all the sample companies potentially have occupational safety and health problems. Voluntary disclosure of this major aspect of management-employee relations appears to be quite limited. In a society where co-determination is common, this lack of disclosure is quite surprising.

Table 3. Average voluntary disclosure by country

Category of disclosure	Community involvement	Pollution	Human resources	Occupational Safety and health	Total
Belgium	1.5	7	3	2	13.5
Denmark	0	0	0	0	0
France	0	0	0	0	0
Germany	0	10	18	4	32
Greece	0	4	5	4	13
Ireland	0	0	0	0	0
Italy	1.5	0	2.5	0	0
Luxembourg	0	0	0	0	0
Netherlands	2	7	15	3.5	27.5
Portugal	0	4	2	0	6
Spain	6.3	1.7	4.7	.7	13.4
UK	0	2.3	5.3	5.6	13.2
Total	11.3	36	55.5	19.8	122.6

To some, corporate social disclosures are a means of communicating social reality. Voluntary production of this reflective viewpoint of management is more likely to occur when widely shared social priorities exist in the localized environment. Stakeholders, for example, may act as if such information (even if it has a propagandist or public relations "flavor") should flow from the firm. Furthermore, voluntary social disclosures may be forthcoming as a responsive pressure from certain constituencies and as a proactive strike to avoid further regulation of the disclosure function.

Table 3 provides information of voluntary disclosures alone. It is apparent from examining the table that there are four tiers of social disclosures on a country basis. Germany and the Netherlands make the most voluntary disclosures. Belgium, Greece, Spain, and the UK are on the next level. Portugal and Italy are on the third tier. Sample companies from Denmark, France, Ireland, and Luxembourg made no voluntary disclosures.

There are differences in social disclosures not only between countries but also within countries. Table 4 provides the within-country comparisons. Of the nine countries with multiple companies in the sample, four show significant within-group disclosure differences. Companies from the Netherlands and Belgium have the most pronounced differences, with those from Spain and Italy also showing major differences. The two countries with mandated disclosure requirements (France and the UK) show very little difference in the amount or category of disclosure. German companies, which dominate voluntary disclosure, show no variation in overall disclosure but a significant difference in disclosure by category.

Discussion and Conclusion

The lack of consistency in social disclosure either between countries or within countries is not surprising. Since only France and the UK have mandated social disclosure requirements, companies from the ten other EC nations make these disclosures

Table 4. Disclosure by company and country

Category of disclosure	Community involvement	Pollution	Human resources	Occupational Safety and health	Total
<i>Belgium</i>					
MHO	0	0	2	0	2
Petrofina	3	14	4	4	25
<i>Denmark</i>					
OK	0	0	0	0	0
Texaco	0	0	0	0	0
<i>France</i>					
Total	0	0	30	30	60
ELF Aquitaine	0	0	30	30	60
Renault	0	0	30	30	60
<i>Germany</i>					
Daimler Benz	0	2	28	2	32
Hoechst	0	18	8	6	32
<i>Ireland</i>					
Seafield	0	0	0	0	0
PJ Carroll	0	0	0	0	0
<i>Italy</i>					
Fiat	3	0	5	0	8
Montedison	0	0	0	0	0
<i>Netherlands</i>					
Royal Dutch					
Petroleum	4	0	0	0	4
DSN	0	14	30	7	51
<i>Spain</i>					
Finanzanto	0	0	5	0	5
Repsol	4	5	5	0	14
Petrofina	15	0	4	2	21
<i>UK</i>					
British Petroleum	9	2	6	4	21
Pilkingtton	14	0	5	5	24
ICI	15	5	5	8	33

voluntarily. Based on the literature, it is apparent that there is no single reason why companies choose to disclose social information. It is also apparent that when disclosure is mandated the level of disclosure increases.

In attempting to bring uniformity to financial reporting by EC companies, the EC can enact requirements for social reporting that either enhance this reporting, maintain the status quo, or eliminate it. Mandated disclosures from France and the UK might be required of all the EC companies. In that case, existing national requirements would become the model for European reporting. Another way of enhancing social disclosure is by implementing the German model (developed by Dierkes) that Deutsche Shell has utilized in its social report.¹⁵

The EC can also choose to ignore social reporting and allow both France and the UK to continue to "force" companies from these countries to make required disclosures. Under this scenario, it is probable that the level of social reporting will continue to be inconsistent both between and within countries. However, it is also possible that companies making voluntary social disclosures will continue to do so. Since there is a demonstrated demand for social information, maintaining the status quo is not the

best situation, especially since the inconsistencies make it difficult to complete intercompany comparisons.

A third possible scenario is that the EC can ask both France and the UK to eliminate their mandated disclosures. This would send a signal to the other countries that social reporting is being discouraged. A decrease in the level of social disclosure might be expected to occur. This, though, is not a probable outcome. The French mandated disclosures fit nicely with the model of co-determination that most of the other EC nations have developed with their employees. Therefore, it would appear to be an anti-labor move to force French companies to stop reporting on relationships with their employees. Still, initiatives to enhance worker informedness, like the Vredeling Proposal, have not fared well.

A "unified" EC can lead (maybe not without difficulty) to more uniform standards for disclosure of the social impacts of economic activity. There is ample historical evidence for a movement towards homogeneity of accounting recording and reporting. When the need has arisen for more consistent financial data outputs (so that intercompany comparisons can be made), the accounting establishment has responded appropriately. But it is inappropriate to expect uniformity of social disclosure without a broader agreement on the underlying purpose that is to be served by reporting on the non-market impacts (i.e., social costs and benefits, negative outputs, production process externalities, and the like) of corporate behavior. There remains today an obvious need for development and acceptance of a transcendent ideology of social reporting.

The empirical evidence developed in this paper from a small sampling of EC annual reports demonstrates that national-level regulation of the reporting function will easily elicit disclosure. In fact, as others have previously noted, without mandated disclosure little social reporting of consequence and substance would be produced voluntarily. Such regulation, though, might be considered simply a parochial manifestation of the particular culture norms, national priorities, or other artifacts of the country involved. Some supra-national goal for this type of disclosure is needed if a rational system of social reporting is to evolve. Even an EC-mandated requirement will necessitate a more fundamental explication of the usefulness of these disclosures to the companies, their stakeholders, and the population at large.

In general, accounting has supported a positivist view of society that is associated with both capitalistic production schema and marginalist or incrementalist economic theories. Capturing a contemporary world view that expresses societal ideologies *can* be a goal in the reporting model. Accounting reports can be seen as phenomena that are reflective of social values in addition to financial and economic metrics alone. Such a transcendent purpose or ideology will be required if social reporting is to have its appropriate place in the soon to be rationalized EC accounting system for reporting on the operations of companies in the unified member countries.

Whether social disclosure is considered to be a reactive or preventative response to governmental or social pressures (this might be seen as a user-utility approach) or an active tool for furthering the private interests of the disclosing entities (i.e., accounting used as a private policy instrument), agreement must be reached as to the purpose to be served by the exercise of disclosure itself. Further, little will be gained if a "generally accepted" standard for social disclosure is promulgated (whether

privately or publicly developed and/or enforced) unless the normal characteristics of financial data (e.g., timeliness, consistency, verifiability, reliability, and so forth) are present. It is clear that mandated disclosures will be produced. The issue for all involved to grapple with is whether the disclosure mechanism will have the expected or desired effect on the behavior of both the producers and users of the data. Generating data in search of a use would appear to be a counterproductive application of scarce resources.

The current state of discontinuity, inconsistency, and non-comparability in EC social disclosure certainly requires attention as the movement toward unification of the European trading partners continues. There is a risk that without active attention the EC will gravitate toward the position of the member country with the least disclosure. Ignoring the social accounting/disclosure issue while dealing with other matters related to financial reporting is an inappropriate response on the part of the unification planners and architects. Notwithstanding the importance and immediacy of need in handling the rationalization of numerous different systems and standards, it would appear to be far more efficient to face the social disclosure problem now as part of the broader accounting directives.

Accounting numbers and accounting reports are not neutral. They are intended to, and in fact do, convey information and affect behavior. As the data developed in this paper show, cross-national differences exist. Reaching consensus as to the type and amount of social information that ought to be produced will be easier if done now while the whole unified recording-reporting system is being developed. If the elusive promise of international harmonization of accounting standards is to be actualized, the EC can take the lead by providing direction on putting in place a broadly conceived financial *and* social accounting system, one that is truly reflective of the societal values involved. Coalescing to a position acceptable to all the countries in Europe should provide a model for moving the rest of the world's economically developed states to a global standard. Agreement on the purposefulness of social disclosures is the first important step needed.

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Exploring the Effect of Non-financial Indicators on Return on Investment in Multinational Companies

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Key words: Multinationals; Non-financial performance indicators; Return on investment

Abstract: *This paper develops a performance evaluation model which explores the association between non-financial indicators of performance and return on investment (ROI) of both U.S. and non-US multinational companies. Temporal relations are investigated through the use of regression models in which ROI is the dependent variable and growth in total factor productivity, in market share and in the number of employees, are the independent variables. The results reflect the importance of employee and productivity growth especially for US multinationals, and indicate that growth in market share and employees affect total productivity growth and ROI later periods.*

Introduction

The domain of business performance covers concepts from financial performance to various dimensions of organizational performance. Financial performance is based on the assumption that financial indicators reflect the attainment of the economic goals of a firm. Return on investment (ROI) is generally accepted as the main indicator of financial performance domain. The next domain covers both financial and operational performance which is mostly reflected in recent strategy research.¹ The broadest domain is the organizational effectiveness which envelopes financial, operational and social aspects of business performance.

This study develops a performance evaluation model which explores the association between non-financial indicators of performance and ROI of both US and non-US multinational firms. It also attempts to uncover the temporal association between the financial and non-financial indicators, that determine whether lagged non-financial

indicators provide a better explanation of the variance in ROI than contemporaneous factors utilizing publicly available financial and non-financial data.

The presentation of the paper consists of two main sections. The first part reviews the performance measures and presents the development of the basic performance model employed in the analysis. In the second section, methodological issues and the statistical model are discussed and the results are presented.

Performance Measures

In the 1960s profit seemed to be the most popular financial measure;^{2,3} in the 1980's however, ROI has become just as, if not more, important as a measure of performance.⁴

The current view in strategic management literature reflects that "market" or "value-based" measures are more appropriate than accounting based measures.⁵⁻⁷ However, these indicators are basically financial in nature and consequently suffer from being subject to monetary fluctuations which may distort their short as well as long-term usefulness.⁸⁻¹² In a multinational setting the existence of different accounting systems and regulations contribute to the reduction in usefulness of financial indicators. Furthermore, problems of financial statement translations, setting transfer prices, and rules governing earnings transfer from host country to home country enhance the difficulties.

Comprehensive Performance Model

In strategy research and theory, as illustrated in Figure 1, the performance of a business unit is based on several activities. Fig. 1 indicates how the major activities of a firm could be pictured together. The inputs of the system (functional area activities) are processed within the strategic business unit (SBU – firm); and the outputs of the "black box" (SBU) are revealed through the key indicators.

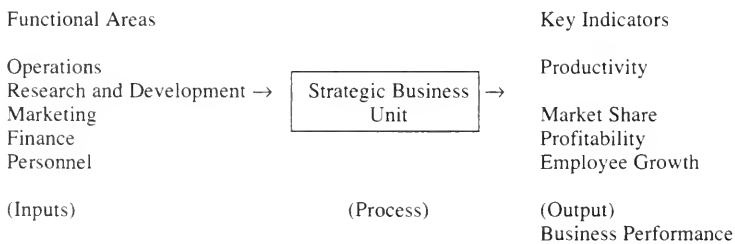


Fig. 1. Strategic areas and key indicators. Adapted from I. Jauch and R. Osborn, "Toward an Integrated Theory of Strategy," *Academy of Management Review* (6, no. 3, 1981), 493.

Although the relevance of any non-financial criterion depends on its ultimate impact on the financial outcome, it is possible that certain non-financial criteria could indicate the trend in the overall business performance earlier than the financial criteria. This possibility finds its roots in the belief that the impact of some of the activities, such as marketing and product innovations, will be felt in the future.¹³⁻¹⁶ Thus, by focusing only on the financial aspects, some of the information is inevitably lost.

In this study a statistical model relating three non-financial indicators which are considered as the representatives of the functional areas, i.e., manufacturing, marketing, and administration to financial area, is developed. The model can be represented in general terms as follows:

$$ROI = f(X_1, X_2, X_3)$$

where ROI = return on investment,

X_1 = total factor productivity growth (TPI),

X_2 = market share growth (MSI),

X_3 = growth in the number of employees (CNE).

Total Factor Productivity Growth (TPI)

In most enterprises a positive association between long-term productivity gains and profitability increases is normally expected.¹⁷ Regarding the relationship between financial and productivity ratios, Kendrick (1961)¹⁸ states that intercompany comparisons of total factor productivity indices might reveal unfavorable trends sooner than would the profit and loss statements and thus provide management with ways that can improve technological performance of the business. However, he warns against using productivity indices as “all purpose” indices and suggests using them in conjunction with other measures to assess progress in the broader realms of social and economic efficiency as contrasted with the narrower realm of technological efficiency.¹⁹ The same view is also supported by other researchers.^{20,21} The growth rate of total factor productivity provides information of the changes in the production efficiency in addition to the points mentioned above.²²

Total factor productivity indices can be calculated using Laspeyres, Paasche, or Divisia methods. The former indices are calculated by using base year prices as weights. Consequently, depending on the base year, they suffer from under- or over-estimating the total change. Selection of the base year will be especially difficult for multinationals because of the dynamic nature of the environment they operate in. On the other hand, the weights in Divisia indices are assigned according to the respective shares of inputs (outputs) in total costs (total sales revenue) in two consecutive years.²³⁻²⁵ This procedure is dynamic enough in nature to facilitate a “truer” comparison of different years. Hence in this study, Divisia index numbers are used to estimate the total factor productivity growth index (TPI).²⁶

$$\frac{TPI_t}{TPI_{t-1}} = \frac{\prod_j (Y_{j,t} / Y_{j,t-1})^{2(\beta_{j,t} + \beta_{j,t-1})}}{\prod_i (X_{i,t} / X_{i,t-1})^{2(\alpha_{i,t} + \alpha_{i,t-1})}}$$

where $Y_{j,t}$ = sale of product j in period t ,

$\beta_{j,t}$ = share of product j in total sales in period t ,

$X_{i,t}$ = cost of input i in period t ,

$\alpha_{i,t}$ = share of cost of input i in total costs in period t ,

i_1 = cost of goods sold,

i_2 = capital inputs (includes amortized research and development costs).

Market Share Growth Index (MSI)

The relationship between market share and ROI has been addressed by many strategy researchers. Most of the findings display a positive association between ROI and market share.²¹⁻³² A study on corporate strategy shows that although the relationship between return on equity and market share is positive at the industry level, among more homogeneous firms the association is negative. The authors tie this result mainly to profit/market share trade-off in the short run and, as a consequence of market share growth, increased production facilities in the long run, especially at the national firms level.³³ This finding also supports the expectation that market share would provide an indication of long-run performance of a firm.

A study on the determinants of profitability for the firms in the United States, Europe, Canada, and Great Britain indicates that market share and quality have the highest positive correlation with profitability.³⁴ However, in the literature in addition to positive association between market share and ROI a negative association is also observed.³⁵

A market share growth index (MSI) is employed as the second non-financial performance indicator because of its demonstrated importance and association with ROI. This variable is calculated as follows:

$$MSI_{j,t} = \sum_i a_{i,j,t} (PSC_{i,j,t} - CEX_{i,t})$$

where $MSI_{j,t}$ = weighted market share growth for firm j between periods t and $t-1$,

$a_{i,j,t}$ = weights assigned to different products or product lines (i) as their share of the sales for firm j in period t ,

$PSC_{i,j,t}$ = ratio of the sale of a product or group of products (i) for firm j in period t to the sale of the same product (i) in period $t-1$,

$CEX_{i,j,t}$ = ratio of global sales of product (i) in period t to the global sale of the same product in period $t-1$.

The market for a multinational company is the world market, which is defined as the global market of a product or a product line in this study. It is believed that this index reflects how well the firm is performing in comparison to the world development in a specific market (i) during a period (t).

Change in the Number of Employees (CNE)

As suggested by the AAA Committee Report (1971)³⁶ on non-financial indicators of performance, the growth of the number of employees is used as the third indicator as a representative of the administrative functions. Since the focus is on managerial control, it appears necessary to include a variable which is mostly under the control of the management. In times of financial or operational difficulties the first resource that is reduced is the labor-force. In times of increasing demand, on the other hand, to meet the new demand level, especially in the short run, capacity utilization is boosted via an increase in the labor-force.

In a study to determine strategic postures, it is found that an excess or shortage of personnel ranks among the higher strategic disadvantages (3.58 out 5) over the period 1930–1974.³⁷ Therefore, inclusion of this variable is supported from the strategic planning perspective as well.

To avoid possible size effects, percentage change in the number of employees (CNE) from the previous year is used as the third non-financial index.

Research Design and Empirical Questions

In this study, the general proposition is to determine the temporal validity of non-financial indicators as shown by their explanatory power to depict the variance in ROI. Based on earlier discussions, it is expected that all non-financial variables will be positively correlated with ROI when a lag is introduced. However, contemporaneous association between market share and ROI could be positive or negative.

Data Collection and Sample Selection

Data for this research were gathered from Compustat II tapes (Industrial Segment, Geographic Area, Business Segments and Annual Industrial) for US multinational companies (USMNEs), and from annual reports of non-US multinational companies (NUSMNEs), and World Trade Statistics of the United Nations.³⁸

Compustat II tapes were screened to ensure that:

- (1) the companies are multinational companies engaged in manufacturing only with operations at least in two or more countries (620 companies);
- (2) the company data met the data requirements of the research, i.e., to consistently provide data on research and development expenses and on product sales (150 companies); and
- (3) the product mix was relatively similar during the period under study (1980–1984) (88 companies).

Annual reports of NUSMNEs were obtained from a private collection at the New York University Accounting Department and from CIFAR (Center for International Financial Analysis and Research, Princeton, New Jersey), and the companies themselves. Altogether, 52 annual reports of NUSMNEs were collected.

Table 1. Means and variances of dependent and independent variables^a

VAR	1984		1983		1982		1981		1980	
	U	N	U	N	U	N	U	N	U	N
ROI	.10 (.005)	.09 (.002)	.07 (.008)	.08 (.001)	.08 (.006)	.08 (.002)	.12 (.005)	.09 (.003)	.13 (.006)	.09 (.002)
TPI	1.02 (.01)	.94 (.003)	.97 (.004)	.95 (.003)	.94 (.006)	.94 (.005)	.97 (.004)	.97 (.007)	—	—
CNE	-.02 (.14)	.02 (.006)	.02 (.02)	.00 (.003)	-.10 (.02)	.02 (.003)	-.02 (.10)	.05 (.01)	—	—
MST	.12 (.03)	.04 (.01)	.04 (.02)	.08 (.01)	.002 (.02)	.17 (.005)	.10 (.09)	.14 (.04)	—	—

^aU = US; *n* = 88. N = Non-US; *n* = 14.

After the screening process, 88 USMNEs and a total of 14 MNEs from Japan, France and Germany were included in the study. The main business segments (product lines) were obtained from Compustat Industrial Segment Tape '84 for USMNEs, and from the annual reports of foreign multinationals. Four-digit SSIC codes were matched with the United Nation's three- or six-digit STIC codes, depending on the specificity of the product, to determine the movement in the global sales of a product line.³⁹ Since world sales figures were not available, and because production figures were incomplete, export figures were used as surrogates.⁴⁰

Simple statistics of the independent variables (TPI, CNE, MSI) and dependent variable (ROI) were examined to provide an overall picture. Table 1 summarizes the means and variances of the variables for USMNEs and NUSMNEs.

Examination of Table 1 reveals that average ROI of NUSMNEs is considerably lower than that of USMNEs in the 1980–1981 period; however, in later periods average ROIs of both groups are not very different. The results also reveal that while NUSMNEs had relatively stable return rates, USMNEs experienced fluctuating return rates. This finding could indicate the emphasis placed by management during the above period to long-term results in NUSMNEs and to short-term profitability in USMNEs, which would lead to different strategies manifesting unstable return rates.

On the other hand, although the average TPI was similar for both groups in 1981 and 1982, during 1983 and 1984 USMNEs enjoyed a higher productivity growth rate. This growth was also observed in domestic production in the United States (147.6 in 1983 and 163.4 in 1984).⁴¹ This finding might be a reflection of productivity awareness of the US companies in recent years.

However, CNE seems to be quite different between the two sets of companies. This finding could be the outcome of labor policies and the prevailing economic conditions in different countries. Earlier in the paper it was stated that an excess or shortage of personnel is regarded as one of the major strategic disadvantages. Especially during times of recession, an excess personnel seems to carry higher weight than a shortage.⁴² If trends in TPI and CNE are examined, it is observed that they change similarly. This finding supports the above position.

The development of MSI is also interesting. Although in the 1981–1983 period NUSMNEs perform better, in 1984 USMNEs realize a higher average, although the net exports are negative for the United States.⁴³ This finding might be a result of the effect of the trade regulations among nations as well as the changes in trade policies

of USMNEs and intrafirm imports and exports, and their strategies in product diversification.

Regression Analyses and Results

A cross-sectional linear multiple regression technique is employed to determine the contemporaneous and lagged relationship between the independent variables (TPI, CNE, MSI) and the dependent variable ROI. The following regression models are tested to investigate the temporal association. The models are run for the combined sample of 102 companies as well as for USMNEs. The regression results obtained from the combined sample are presented following the model specifications.⁴⁴

Model 1: Contemporaneous Model

To determine the contemporaneous relation among the variables, ROI_{*t*} is regressed on TPI_{*t*}, CNE_{*t*}, and MSI_{*t*}. This model is run for each year separately (1981–1984) to observe the relationship over the period based on sample companies (102).

$$ROI_t = b_0 + b_1 TPI_t + b_2 CNE_t + b_3 MSI_t + e \text{ (error term)}$$

As presented in Table 2, there is a low but significant relationship (0.25 in 1982) between the non-financial indicators and ROI during 1981–1983 period. However, 1984 data do not display any relationship. This finding could be taken as an indication of the change in strategic planning perspectives, i.e., more long-term profitability-oriented decisions were made in 1983 and 1984.

TPI and especially CNE are the significant variables. As expected CNE and ROI are positively related. Especially in 1982, CNE has the highest coefficient value. This is the year when ROI and CNE values dropped considerably from their previous year levels. However, MSI does not enter the model as one of the significant variables, although the association is positive as observed in most of the earlier research.

Table 2. Results of contemporaneous model

Dependent variable = ROI _{<i>t</i>}									
Var.	Exp. sign	1981 (<i>n</i> = 101)		1982 (<i>n</i> = 100)		1983 (<i>n</i> = 102)		1984 (<i>n</i> = 100)	
		Coeff.	<i>t</i>	Coeff.	<i>t</i>	Coeff.	<i>t</i>	Coeff.	<i>t</i>
inter		.0456	.407	-.0453	-.522	-.2439	-1.899	.0767	.973
TPI _{<i>t</i>}	+	.0725	.623	.1482	1.596 ^c	.3263	2.350 ^a	.0286	.358
CNE _{<i>t</i>}	+	.1845	2.914 ^a	.1935	3.054 ^a	.1134	1.734 ^b	.0074	.397
MSI _{<i>t</i>}		.0561	1.110	.0953	1.516	.1004	1.590	-.0243	.587
Model F		4.997		12.058		9.236		1.53	
d.f.(<i>m</i> ; <i>e</i>)		(3; 97)		(3; 96)		(3; 98)		(3; 96)	
Prob. of signif.		<.003		<.0001		<.0208		<.9243	
R ²		.1339		.2716		.2204		.005	
Adjusted R ²		.1071		.2491		.1965		.000	

^aStatistically significant at $\alpha = .01$, one-tail.
^bStatistically significant at $\alpha = .05$, one-tail.
^cStatistically significant at $\alpha = .10$, one-tail.

Model 2: One-Year Lag Model

In this and the following models lagged relationships are explored. Due to the long-term nature of the independent variables and the conceptualized relationship between each independent variable and ROI, it is expected that these models will perform better than the first one to explain the variance in ROI. It is believed that the production plans are made earlier according to the anticipated demand which is reflected in the sales estimates. Thus, it is expected that growth in market share and change in the number of employees will affect ROI the following year. This model is run for 1982, 1983, and 1984 for 102 companies:

$$ROI_t = b_0 + b_1 TPI_{t-1} + b_2 CNE_{t-1} + b_3 MSI_{t-1} + e$$

This model yields more information than Model 1, as evidenced by the adjusted R^2 values, particularly in 1983 ($R^2 = 0.43$).

In this model, TPI and CNE especially have a significant effect on ROI the following year. As expected, the association between these variables and ROI is positive. This finding conforms to the belief that companies will enjoy higher returns during the following period due to changes in demand and related production adjustment.

Table 3. Results of one-year lag model

Dependent variable = ROI_t		1982 ($n = 100$)		1983 ($n = 102$)		1984 ($n = 100$)	
Var.	Exp. sign	Coeff.	t	Coeff.	t	Coeff.	t
inter		-.2136	-2.431 ^a	-.3295	-3.366 ^a	.0774	1.039
TPI_{t-1}	+	.3107	3.342 ^a	.4374	4.385 ^a	.0134	.179
CNE_{t-1}	+	.2169	3.696 ^a	.2832	4.902	.1819	3.142 ^a
MSI_{t-1}	+	.0132	0.549	.0865	1.631 ^c	.1239	2.605 ^a
Model F		7.107		25.394		10.497	
d.f.($m; e$)		(3; 96)		(3; 98)		(3; 96)	
Prob. of signif.		<.0003		<.0001		<.0001	
R^2		.1787		.4424		.2451	
Adjusted R^2		.1381		.4250		.2217	

^aStatistically significant at $\alpha = .01$, one-tail.

^bStatistically significant at $\alpha = .05$, one-tail.

^cStatistically significant at $\alpha = .10$, one-tail.

Model 3: Two-Year Lag Model

In order to examine the association involving longer lags, this and the following models are tested. It is believed that when longer lag periods are involved, the temporal interaction among the independent variables will help to improve the information provided by the non-financial indicators:

$$ROI_t = b_0 + b_1 TPI_{t-1} + b_2 CNE_{t-2} + b_3 MSI_{t-2} + e$$

Table 4. Results of two-year lag model

Dependent variable = ROI _t					
var	Exp. sign	1983 (n = 102)		1984 (n = 100)	
		Coeff.	t	Coeff.	t
inter		-.1981	-2.131 ^b	-.1892	-2.017 ^b
TPI _{t-1}	+	.2864	2.912 ^a	.3155	3.229 ^a
CNE _{t-2}	+	.1159	1.807 ^b	.2338	4.110 ^a
MSI _{t-2}	+	.0227	.892	.0219	.428
Model F		3.69		14.76	
d.f.(m; e)		(3; 98)		(3; 96)	
Prob. of signif.		<.0145		<.0001	
R ²		.1025		.3112	
Adjusted R ²		.0747		.2901	

^aStatistically significant at $\alpha = .01$, one-tail.

^bStatistically significant at $\alpha = .05$, one-tail.

Contrary to expectations, this model did not perform as well as Model 2 in 1983, although there is a slight increase in 1984. However, it still performs better than the contemporaneous model. Although the coefficients are not as large as the ones observed in the previous model, again TPI and CNE are the most significant variables. This observation could lead us to believe that in a manufacturing MNE indicators that reflect the production and personnel functional areas occupy the central position in determination of a strategy to reach higher ROI in the following two periods under the given demand conditions.

Model 4: Lagged Interdependencies Model

To examine one of the possible combined lag effects among the independent variables, the following model is developed:

$$ROI_t = b_0 + b_1 TPI_t + b_2 CNE_{t-2} + b_3 MSI_{t-1} + e$$

Table 5. Results of lagged interdependencies model

Dependent variable = ROI _t					
Var.	Exp. sign	1983 (n = 102)		1984 (n = 100)	
		Coeff.	t	Coeff.	t
inter		-.5120	-4.565 ^a	-.0203	.277
TPI _t	+	.5961	5.136 ^a	.0929	1.239
CNE _{t-2}	+	.1438	2.369 ^a	.2344	4.618 ^a
MSI _{t-1}	+	.2002	4.048 ^a	.0992	2.327 ^a
Model F		16.16		13.47	
d.f.(m; e)		(3; 98)		(3; 96)	
Prob. of signif.		<.0001		<.0001	
R ²		.3310		.2919	
Adjusted R ²		.3105		.2702	

^aStatistically significant at $\alpha = .01$, one-tail.

^bStatistically significant at $\alpha = .05$, one-tail.

^cStatistically significant at $\alpha = .10$, one-tail.

The results of this model show that although the observed R^2 values are lower for 1983, most independent variables exhibit significant effects in explaining the variance in ROI.

Although the association between the independent variables and ROI is still positive, this model does not outperform Model 3.

Model 5: Three-Year Lag Model

For 1984 only, it was possible to try a three-year lag model. The rationale for the design of the model lies in the belief that demand expectation occupies a central role in the long-term planning process. Therefore, MSI is lagged by three years. If we can conceptualize that CNE could be a surrogate measure for the capacity utilization, the next step following the planning would be capacity adjustment which will affect the productivity growth (TPI) in the following period. Thus the following model is formed:

$$ROI_t = b_0 + b_1 TPI_{t-1} + b_2 CNE_{t-2} + b_3 MSI_{t-3} + e$$

In 1984, this model outperformed the others, with an R^2 of 32% ($p \leq .0001$). All variables (TPI, CNE, and MSI) enter the picture as significant variables. An MNE which innovates a product especially in fast developing industries, e.g., electronics, might enjoy the outcome in the following year or the year after. A study on intrafirm trade provides yet another explanation. In 1984, it is found that 16.2% total US imports were from manufacturing USMNEs; and the foreign affiliates of these companies shifted the focus of their sales in approximately the same period and, while their sales in the local markets fell, sales to their US parents increased (from 8% to 12 % of their sales in 1984). During the same period, exports of US companies increased at a higher rate (30.8% in 1984).⁴⁵ This finding also explains the higher increase in MSI of USMNEs relative to NUSMNEs in 1984.

Table 6. Results of three-year lag model

Dependent variable = ROI _t			
1984			
Var.	Exp. sign	Coeff.	t
inter		-.1924	-2.087 ^a
TPI _{t-1}	+	.3174	3.364 ^a
CNE _{t-2}	+	.2465	5.515 ^a
MSI _{t-3}	+	.0277	1.424 ^c
Model F		15.651	
d.f.(m; e)		(3; 96)	
Prob. of signif.		<.0001	
R ²		.3239	
Adjusted R ²		.3032	

^aStatistically significant at $\alpha = .01$, one-tail.

^bStatistically significant at $\alpha = .05$, one-tail.

^cStatistically significant at $\alpha = .10$, one-tail.

Table 7. Comparative R^2 values (adjusted)

	USMNEs				Entire Sample			
	1981	1982	1983	1984	1981	1982	1983	1984
model								
1	.14	.19	.22	.00	.11	.25	.20	.00
2		.17	.44	.16		.14	.43	.22
3			.09	.36			.08	.29
4			.37	.33			.31	.27
5				.36				.30

Discussion of Results

The results of the models demonstrate the existence of an association between ROI and non-financial indicators when publicly available data are utilized. Although a contemporaneous association during the period 1981–1983 is observed, 1984 does not follow the same pattern. On the other hand, the results obtained for the USMNEs show a stronger relation than the whole sample (Table 7). At this point, based on limited observation we could possibly state that while there seems to be a shift to more long-term planning in USMNEs, it seems that NUSMNEs are shifting to short-term profitability-oriented decisions.

The results of Models 4 and 5 support the expectation that lagged models perform better than contemporaneous ones in providing information of the variance in ROI. Thus, this finding would support the view that non-financial indicators reflect the changes in performance of an enterprise earlier than the financial indicators.

Except for 1984, when longer lag period(s) are introduced, R^2 values tend to decrease in USMNEs. We should remember that although the results are obtained in 1984, the decisions leading to those are taken in 1983 and possibly in 1982. This might suggest the view that the perceptions of the foreign operations changed from 1980 to 1984. A survey of multinational company practices of subsidiary evaluation⁴⁶ and colloquium presentations of company practices on performance evaluation strengthen the same view.⁴⁷ Development of the intrafirm trade also provides an indication of the globalization of the production network to take advantage of economies of scale and national differences.⁴⁸

Although the importance of lag is demonstrated through the models, especially for USMNEs, no single model has been detected as the best one for the years and sample companies in the study. However, we could say that Model 4, in which CNE and MSI are lagged by two periods, performs better than the other ones in general. Therefore, we could possibly state that the employee turnover and market share growth indices are the leading indicators.

Table 8 summarizes the direction of association between the independent variables and ROI for each year and models for USMNEs and the entire sample.

The results reported in Table 8 indicate that in most models non-financial indicators are positively related to ROI as expected. It might have been expected that all MNEs display similar strategies; however, the results of the analyses suggest that cultural and economic differences affect the management of MNEs even at the global level as depicted by the differences in R^2 values and the significant variables.

Table 8. Significant variables and direction of association

US MNEs												
Mod./var.	TPI	1981 CNE	MSI	TPI	1982 CNE	MSI	TPI	1983 CNE	MSI	TPI	1984 CNE	MSI
1	+	+ ^a	+	+	+ ^a	+ ^c	+ ^a	+ ^c	+ ^c	+	+	-
2				+ ^a	+ ^a	+	+ ^a	+ ^a	+ ^b	+	+ ^c	+ ^a
3							+ ^a	+ ^a	+	+ ^a	+ ^a	+
4							+ ^a	+ ^a	+ ^a	+	+ ^a	+ ^b
5										+ ^a	+ ^a	+ ^c
Entire sample												
Mod./var.	TPI	1981 CNE	MSI	TPI	1982 CNE	MSI	TPI	1983 CNE	MSI	TPI	1984 CNE	MSI
1	+	+ ^a	+	+ ^c	+ ^a	+ ^c	+ ^a	+ ^b	+ ^c	+	+	-
2				+ ^a	+ ^a	+	+ ^a	+ ^a	+ ^b	+	+ ^a	+ ^a
3							+ ^b	+ ^b	+	+ ^a	+ ^a	+
4							+ ^a	+ ^a	+ ^a	+ ^c	+ ^a	+ ^a
5										+ ^a	+ ^a	+ ^c

^aStatistically significant at $\alpha = .01$, one-tail.^bStatistically significant at $\alpha = .05$, one-tail.^cStatistically significant at $\alpha = .10$, one-tail.

Conclusion and Direction for Further Research

As the main conclusion we can state that although a specific model of association cannot be defined clearly, the importance of non-financial indicators of performance is demonstrated, especially employee and productivity growth for USMNEs. The performance of the lagged models support the belief that non-financial indicators do signal the financial future performance of a company. The results of Model 4 show that market share growth and employee growth are the leading indicators whose outcome is felt in total productivity growth and ROI in later periods.

Therefore, to appraise and predict the overall performance of a company, it is necessary to develop a model which takes functional areas, such as production, financing, and administration and the culture(s) in which the company operates, into consideration. This model can be developed for both short- and long-term purposes. Consequently, it will be possible to make or modify the plans to reach the pre-designated financial goals by the help of leading non-financial indicators. Thus, further research, probably case studies, combining accounting data and strategic planning goals of firms in a way to facilitate decision making of outside parties will improve our understanding of multinational companies.

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International Accounting Standard 29: Formulation and Clarification of Income Measurement in Hyperinflationary Economies

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Key words: Accounting standards; Current-cost net income; Income measurement; Inflation accounting; Interest expenses; Accounting restatements

Abstract: *This paper analyzes the “International Accounting Standard 29 (IAS 29) – Financial Reporting in Hyperinflationary Economies,” which became operative on January 1, 1990. The model for income measurement underlying IAS 29 is formulated to clarify and simplify the application of the stipulated requirements. Special attention is given to the treatment of interest expenses. We propose to extend the model by utilizing a novel procedure for partitioning the current-cost net income into realized and nonrealized portions to improve the information content of the restated reports. IAS 29’s extra requirement to restate income–statement items is also analyzed. This requirement provides auxiliary information for planning and control purposes. Simplified examples, where the results are self evident, serve as illustrations.*

The International Accounting Standards Committee approved, in April 1989, International Accounting Standard (IAS) 29, “Financial Reporting in Hyperinflationary Economies,” which became operative for financial statements covering periods beginning on or after January 1, 1990. “This statement applies to the... financial statements... of any enterprise that reports in the currency of a hyperinflationary economy” (para. 1). “Hyperinflation is indicated by several characteristics of the economic environment of a country, ... [mainly where] the cumulative inflation rate over three years is approaching, or exceeds, 100%” i.e. 26% per annum (para. 3).¹ Several countries have already adopted requirements that confirm with IAS 29.² This standard will certainly improve “the quality of presentation of financial statements” and “increase the degree of uniformity,” as stated in the Preface to IAS.

IAS 29 provides a list of requirements and procedures but it does not delineate the entire framework for measuring income nor does it provide a numerical illustration.

Further, IAS 29 requires restating both balance-sheet and income-statement items to the closing balance-sheet date. While restating balance-sheet items is a common procedure used by inflation-accounting systems, restating intra-year financial statement items is, to our knowledge, not common.³

The objective of this paper is to formulate the model for income measurement underlying the individual requirements stipulated by IAS 29, drawing upon former studies. The model should clarify the standard and thus simplify its application. Special attention is given to the treatment of interest expenses. While delineating the model, an extension is proposed to partition the total current-cost net income into realized and nonrealized portions. The model also helps an understanding of the extra requirement to restate income-statement items.

The mode of analysis used follows the premise that a model should give correct answers to simple as well as to complicated problems. Thus, simple examples are used for illustration, where the results are self-evident.

The Basic Model for Income Measurement

Inflation-adjusted (current-cost) net income of a company in a period is best determined by the change in equity (excluding new issues), measured in constant prices, between the closing and opening balance sheets.^{4,5} The value of equity is equal to the value of assets at current prices less liabilities, stated at the price level of the balance sheet date. The net income after tax and after dividends is retained (i.e. added to the balance sheet before closing); thus, it is stated in terms of the price level at the closing date.

In practice, the current-cost net income is determined by adding to or subtracting from the historical-cost net income some inflation adjustments of costs and values that are related to balance-sheet items. Since IAS 29 does not provide a numerical illustration from which the model can be derived, we use the numerical example accompanying the Statement of Financial Accounting Standards No. 33 (SFAS No. 33)⁶ for deriving the basic model; but two changes are introduced to comply with IAS 29: (1) the current-cost net income is measured in end-of-year terms (IAS 29, paras. 7, 38) and (2) only the general price index is used for restatement purposes (IAS 29, paras. 9, 35).⁷

To simplify the presentation and because of space limitations, the analysis of the basic model ignores (1) intra-period capital transactions, i.e. investments, disposals of assets, equity additions and interim dividends; (2) interest income and foreign exchange differences related to invested or borrowed funds, and (3) restating income-statement items, the effect of which is cancelled in the model (see the section on this topic below).

The model is based on the current-cost opening balance sheet. It adjusts the historical-cost net income by (1) correcting the historical depreciation charges and cost of sales, and (2) adding to it the inflation gain or loss on net monetary position ("excess of monetary liabilities over monetary assets"; IAS 29, paras. 25, 26, 39). The basic model can be formulated as follows:

$$NI_c = NI_h - \Delta D + \Delta I + pM_{t-1,c} \tag{1}$$

where NI = net income after tax and dividends;
c = current-cost value at date of balance sheet;
h = historical-cost value from conventional accounting;
 ΔD = restated depreciation minus historical depreciation;
I = stock of inventories;
 $\Delta I = [(I_{t,c} - I_{t-1,c}) - (pI_{t-1,c})] - [I_{t,h} - I_{t-1,h}]$
= inventory revaluation gains;⁸
t = date of balance sheet;
p = inflation rate, i.e. change in the general price index;
M = net monetary position = liabilities minus monetary assets, as depicted in the schematic balance sheet below;
= nonmonetary assets minus equity; i.e. nonmonetary assets financed by debt.

Monetary assets	Liabilities
Nonmonetary assets	Equity

$$M = (\frac{\text{Monetary assets}}{\text{Nonmonetary assets}} - \frac{\text{Liabilities}}{\text{Equity}}) = M$$

Nonmonetary assets are assets whose nominal value changes with the general price level, such as fixed assets and inventories. Monetary assets are assets and claims whose nominal value is stated in fixed money units, regardless of changes in the general price level, such as cash and receivables. (“Monetary items are money held and items to be received or paid in money,” para. 10).

Treatment of Interest Expenses

The following IAS 29 statement is analyzed in this section:

The impact of inflation is usually recognized in borrowing costs. It is not appropriate both to restate the capital expenditure financed by borrowing and to capitalize that part of the borrowing costs that compensates for the inflation during the same period. This part of the borrowing costs is recognized as an expense in the period in which the costs are incurred. (para. 19)

The meaning of the first sentence is that when the inflation is fully anticipated and the loan is fully inflation compensated, the normal interest rate is:

$$r \doteq (1 + r^*) (1 + p) - 1 = p + r^*(1 + p) \tag{2}$$

where r = inflation-compensated interest rate;
r*= pre-inflation interest rate;
p = inflation rate.

Let L_{t-1} be the loan's principal at the beginning of the year, then the interest on the loan, paid at the end of the year, is:

$$rL_{t-1} = pL_{t-1} + r^*(1 + p)L_{t-1} \quad (3)$$

When L_{t-1} represents the total outstanding loans of a company, rL_{t-1} represent the total interest expenses, and r the actual average interest rate.

The variable pL_{t-1} is inflation compensation of the principal, which is not an expense in economic terms. But following conventional accounting principles, IAS 29 requires inclusion of this variable as an expense (last sentence of para. 19).

The second sentence of para. 19 implies that since the variable pL_{t-1} is considered as an expense, the cost related to the restatement gain of the assets financed by the loan should not also be charged. Therefore, the variable $pM_{t-1,c}$ is credited to income (Eq. 1). In addition, para. 26 suggests presenting the interest expenses (rL_{t-1} in Eq. 3) together with $pM_{t-1,c}$ which means that the user of the report should compare the two figure and even combine them, as proposed by N.V. Philip's inflation accounting system.⁹ In other words, given that:

$$NI_h = (S-C)_h - R$$

where $(S-C)_h$ = sales minus total costs excluding interest expenses, from conventional accounting, and R = actual interest expenses, then, Eq. (1) will become:

$$NI_c = (S-C)_h - \Delta D + \Delta I + [-R + pM_{t-1,c}] \quad (4)$$

The bracketed variable is supposed to indicate the restated financial expenses.

When loans finance fixed assets, the bracketed portion will indicate the real, inflation-free interest expense. This is because the variable $pM_{t-1,c}$ equals the variable pL_{t-1} in Eq. (3). When loans finance monetary assets, on the other hand, the bracketed portion will indicate the nominal, inflation-compensated interest expense, because $M_{t-1,c} = 0$. This subject becomes complicated for the case where inventories are financed by loans. Shashua and Goldschmidt, in an analytical study of the role of interest in financial and economic analysis under inflation,¹⁰ classify the assets according to three types – appreciable (fixed assets), monetary, and revolving (inventories) – corresponding to two types of interest rates to be used: nominal and real. They prove that nominal interest rate (not real, inflation-free rate) should be used in compounding cash flow generated by inventories, as it should be done in the case of monetary assets. In other words, the variable $pM_{t-1,c}$ is not comparable with the variable R in the case of inventories; combining these variables provides meaningless results as shown by the illustration below.

In summary, comparing or combining the interest expenses (R) with the gains on net monetary position ($pM_{t-1,c}$) is usually meaningless since these variables are affected specifically by the type of assets financed by loans – fixed assets, monetary assets, or inventories; and most companies hold a mixture of these assets.

Realized and Nonrealized Income

Many inflation-accounting models report two types of current-cost net income: realized and nonrealized (e.g. SFAS No. 33).¹¹ Users of income figures often view the realized net income as the main figure to be considered (e.g. Evans and Freeman, Grant, Hart).¹² This is because the nonrealized portion of net income (variable $pM_{t-1,c}$ in Eqs. (1) and (4) represents a change in balance-sheet values. IAS 29 does not require reporting realized income, but when IAS 29 will be applied, some users may require to derive the realized portion, which means that Eq. (4) will become:

$$NI_c = [(S-C)_h - \Delta D + \Delta I - R] + [pM_{t-1,c}] \tag{5}$$

The first bracketed variable indicates the realized income, and the second – the nonrealized income.

The partitioning, as shown in Eq. (5), does not suit IAS 29 requirements for the case that inventories are financed by debt capital. In this case, the first bracketed portion of Eq.(5), which states the realized net income, includes two inflation adjusted items: pL_{t-1} (which is included in R) and $pI_{t-1,c}$ (which is included in ΔI). And this contradicts the second sentence in para. 19 of IAS 29.¹³

In other words, the procedures stipulated by IAS 29 do not allow stating the realized income of companies when the inventories are financed by loans. But in many companies the inventories are financed, to a large extent, by loans.¹⁴

To enable users of the restated income statements, conforming with IAS 29, to receive correct realized income figures, we propose to adopt the following simple procedure developed by Shashua.¹⁵ Adding to and subtracting from Eq. (5) the variable $f(\Delta D-\Delta I)$, we obtain:

$$NI_c = [(S-C)_h - \Delta D + \Delta I - R + f(\Delta D-\Delta I)] + [pM_{t-1,c} - f(\Delta D-\Delta I)] \tag{6}$$

where f = Net monetary position (M)/Nonmonetary assets, and where both variables are estimated for the beginning of the year or as the weighted average for the year (IAS 29, para. 25).

In summary, this procedure of estimating the realized portion of income, which does not require additional figures, provides important information to the users of the financial statements.

Illustrations

The application of the model for measuring the current-cost net income is illustrated here on two simplified examples: (1) a case of depreciable assets and (2) a case of inventories. The illustrations start when stable prices prevail, then inflationary conditions are assumed.

To simplify the presentation and to study the pure effect of inflation on the reported figures, the following assumptions are used:

- (1) Inflation is neutral; i.e. it affects the prices of all the goods equally.
- (2) Inflation is fully anticipated; i.e. the expected and actual inflation rates coincide.
- (3) The inflation is uniform; i.e. it is steady over the year.
- (4) The funds are fully compensated for the decline in the purchasing power (real value) of the principal due to inflation.
- (5) There is no income tax and no dividends.

Relaxing the assumptions would not change the conclusions arrived at in this paper.

Depreciable Assets

Consider a company with an investment of \$100 in a fixed asset which is straight-line depreciated over five years, financed by \$50 equity and \$50 loan, the principal

Exhibit 1. Financial statements, a case of depreciable assets

Panel A: stable prices

Income statement		Cash flow	
EBID ^a	\$ 30	EBID ^a	\$ 30
Interest, 0.10×50	(5)	Interest	(5)
Depreciation, $100 : 5$	(20)	Loan repayment, $50 : 5$	(10)
Net income	5	Surplus	15

Balance sheets			
Opening		Closing	
\$ 100	Asset	\$ 80	
-	Cash	15	
100		95	
\$ 50	Equity	\$ 50	
50	Loan	40	
-	Net income	5	
100		95	

Panel B: inflationary conditions, 20% per annum

Income statement, historical		Cash flow	
EBID ^a , $(1+0.20)30$	\$ 36	EBID ^a	\$ 36
Interest, 0.32×50	(16)	Interest	(16)
Depreciation, $100 : 5$	(20)	Loan repayment, $50 : 5$	(10)
Net income	0	Surplus	10

Balance sheets			
Opening		Closing	
		Historical	Current
\$ 100	Asset	\$ 80	\$ 96
-	Cash	10	10
100		90	106
\$ 50	Equity	\$ 50	\$ 50
50	Loan	40	40
	Revaluation gains		16
100		90	106

^aEBID = earnings before interest and depreciation.

of which is repaid by five equal end-of-year payments, carrying 10 percent interest per annum. The earnings before interest and depreciation (EBID) are \$30, paid at the end of the year. To simplify the presentation, it is assumed that there are no inventories and no capital transactions (investment, assets disposal, and issue of equity capital).

The financial statements for the first year, when stable prices prevail, are presented in Panel A of Exhibit 1. The corresponding financial statements under inflationary conditions, where the price level of all items involved increased by 20 percent during the year, and the interest rate on loan was 32 percent derived by Eq. (2), are presented in Panel B of Exhibit 1.

The current-cost net income can be derived easily from the restated (current-cost) balance sheets, as follows:

	<u>Opening</u>	<u>Closing</u>
Assets	\$100	\$106
Loan	<u>(50)</u>	<u>(40)</u>
Equity	50	66
Opening equity		(50)
Equity maintenance, 0.20×50		<u>(10)</u>
Net income, current cost		6

Applying Eq. (4), we obtain:

$$\begin{aligned} \Delta D &= \text{current depreciation minus historical depreciation} \\ &= 24 - 20 = 4 \\ M_{t-1,c} &= \text{liabilities minus monetary assets} \\ &= 50 - 0 = 50 \\ NI_c &= (S-C)_h - \Delta D + [-R + pM_{t-1,c}] \\ &= (36-20) - 4 + [-16 + 0.20 \times 50] \\ &= 12 + [-6] = 6 \end{aligned}$$

The current-cost net income of \$6 is equal, in real terms, to the pre-inflation net income (1.2×5). But this figure does not suffice to explain the company's situation because the \$6 figure is comprised of several variables, each conveying specific information. IAS 29's proposal to present the interest expenses together with the gains on net monetary position (para. 26) implies that the restated financial expense is -\$6 (the bracketed portion), which is equal, in real terms, to the pre-inflation figure. In other words, the bracketed portion above represents, in this case (of fixed assets), the inflation-free interest expenses. This result does not hold, however, for the case of monetary assets and inventories, as shown later.

Applying Eq. (6), for deriving the realized and nonrealized portions of the current-cost net income, we obtain:

f = Net monetary position/Nonmonetary assets

$$= 50/100 = 0.5$$

$$\begin{aligned} NI_c &= [(S-C)_h - \Delta D - R + f(\Delta D)] + [pM_{t-1,c} - f(\Delta D)] \\ &= [(36-20) - 4 - 16 + 0.5(4)] + [0.20 \times 50 - 0.5(4)] \\ &= [-2] + [8] = 6 \end{aligned}$$

The realized income is -\$2 and the nonrealized income is \$8. The information content of these figures is meaningful. Suppose the company's policy is planning, as a going concern, to replace the depreciated assets annually. That is, at the end of the year it reinvests \$24 in a new asset ($1/5 \times 100 \times 1 + 0.20$), half of which is financed by a loan (as in the case of the original investment), \$10 by the cash surplus, and \$2 must be acquired from outside the company. This missing sum equals the realized loss.

Inventories

Consider a company that purchases and sells 100 units of goods at the end of each quarter and keeps a stable stock of inventory consisting of 100 units. To simplify the presentation, it is assumed that the company does not hold fixed assets and that there are no operating costs. The purchasing and selling prices are \$2.50 and \$2.70 per unit, respectively. The opening inventory of \$250 is financed by a loan carrying 1 percent interest per quarter. The quarterly cash surplus is used to repay the loan's principal.

The financial statements, when stable prices prevail, are presented in Panel A of Exhibit 2. The corresponding financial statements under inflationary conditions, where the price level of both purchases and sales increased by 5 percent per quarter (21.55% per annum), and the interest rate on the loan is 6.05 percent per quarter (derived by Eq. 2), are presented in Panel B of Exhibit 2. The current-cost net income is \$86.37, which equals the cash inflow, and also is equal, in real terms, to the pre-inflation net income (1.2155×71.06). Applying Eq. (4), we obtain:

$$\begin{aligned} \Delta I &= (I_{t,c} - I_{t-1,c}) - pI_{t-1,c} - (I_{t,h} - I_{t-1,h}) \\ &= (303.88 - 250.00) - 0.2155 \times 250 - (303.88 - 250.00) = -53.88 \\ NI_c &= (S-C)_h + \Delta I + [-R + pM_{t-1,c}] \\ &= (144.39) - 53.88 + [-58.02 + 0.2155 \times 250] \\ &= 90.51 - [4.15] = 86.37 \end{aligned}$$

The restated interest expenses, as derived by the bracketed portion above, is meaningless (\$4.15 compared to the pre-inflation expense of \$8.94). If the inventory is considered as a monetary asset, however, the bracketed portion will indicate the nominal interest expenses (\$58.02) but IAS 29 classifies inventories as nonmonetary assets (para. 13).

Trying to determine the realized portion of the net income in the conventional way, i.e. by applying Eq. (5), we obtain:

$$NI_c = -32.50 + 53.88 = 86.37$$

Exhibit 2. Financial statements and quarterly income and expenses reports, a case of inventories under FIFO accounting

	End of quarter					Closing balance	Total	Income statement, conventional	
	Opening balance	1	2	3	4				
Panel A: stable prices									
Sales		270.00	270.00	270.00	270.00	1080.00	Sales	1080.00	
Purchases		-250.00	-250.00	-250.00	-250.00	-1000.00	Inventory, opening	250.00	
Inventories	250.00					250.00	Purchases	1000.00	
							Inventory, closing	250.00	
Receipts		270.00	270.00	270.00	270.00	1080.00	Cost of sales	-1000.00	
Payments		-250.00	-250.00	-250.00	-250.00	-1000.00	Gross profit	80.00	
Cash surplus		20.00	20.00	20.00	20.00		Interest	-8.94	
Interest (i=1%)		2.50	2.33	2.15	1.97				
Loan	250.00	232.50	214.83	196.97	178.94	178.94	Net income	71.06	
Assets less loan	0.00					71.06			
Panel B: inflationary conditions, 5% per quarter (21.55% per annum)									
Index	1.0000	1.0500	1.1025	1.1576	1.2155				
Sales		283.50	297.68	312.56	328.19	1221.92	Sales	1221.92	
Purchases		-262.50	-275.63	-289.41	-303.88	-1131.41	Inventory, opening	250.00	
Inventories	250.00					303.88	Purchases	1131.41	
							Inventory, closing	303.88	
Receipts		283.50	297.68	312.56	328.19	1221.92	Cost of sales	-1077.53	
Payments		-262.50	-275.63	-289.41	-303.88	-1131.41	Gross profit	144.39	
Cash surplus		21.00	22.05	23.15	24.31		Interest	-58.02	
Interest (i=6.05%)		15.13	14.77	14.33	13.80	58.02			
Loan	250.00	244.13	236.84	228.02	217.51	217.51	Net income	86.37	
Assets less loan	0.00					86.37			
Panel C: restatement of income - statement items									
Index	1.0000	1.0500	1.1025	1.1576	1.2155				
Restatement factor	1.2155	1.1576	1.1025	1.0500	1.0000				
Sales		328.19	328.19	328.19	328.19	1312.75			
Purchases		-303.88	-303.88	-303.88	-303.88	-1215.51			
Balance		24.31	24.31	24.31	24.31	97.24			
Inventories	303.88					303.88			

As can be seen, the realized income of $-\$32.50$ is nonsense, as the cash inflow is $\$86.37$. To prevent such meaningless result, Eq. (6) should be applied as follows:

$$\begin{aligned} NI_c &= [(S-C)_h + \Delta I - R + f(-\Delta I)] + [pM_{t-1,c} - f(-\Delta I)] \\ &= [(144.39) - 53.88 - 58.02 + 1(53.88)] + [0.2155 \times 250 - 1(53.88)] \\ &= [86.37] + [0] = 86.37 \end{aligned}$$

The first bracketed portion indicates the realized income of $\$86.37$.

Restating Income-Statement Items

IAS 29 requires that all items in the income statement are expressed in terms of the measuring unit current at the balance sheet date. Therefore all amounts need to be restated by applying the change in the general price index from the dates when the items of income and expenses were initially recorded in the financial statements. (para. 24)

Contrary to conventional discounting or compounding procedures, IAS 29 requires: (1) compounding accrual figures rather than cash flow figures; (2) using the inflation rate rather than the cost of capital (interest plus inflation rates) for compounding. Therefore, the restated income-statement items can not provide the current-cost net income. The discussion in the former sections shows that restated balance-sheet items suffice for calculating the current-cost net income.¹⁶ If the sum of the restatement differentials from restating the income-statement items (sales, purchases and expenses) is added to the variable NI_h in Eq. (1), the same sum should be deducted from the variable $pM_{t-1,c}$. This procedure does not add usable information but it is cumbersome and, therefore, is redundant. Thus, a question arises: for what purpose should the restated income-statement items be used?

There are at least two plausible uses for the restated income-statement items. First, to report meaningful input and output figures which are similar to those reported when stable prices prevail, as shown in Panel C of Exhibit 2. Second, to try to derive the restated financial expenses, as recently proposed by the Institute of Certified Accountants in Israel;¹⁷ that is:

$$-R_c = NI_c - (S-C)_c \quad (7)$$

where R_c , NI_c , $(S-C)_c$ are restated (current) interest expenses, net income, and sales less total costs excluding interest expenses, respectively.

The two plausible uses are illustrated in the following simplified example. The example is analyzed under two conditions: first, where the accrued figures coincide with the cash flow figures: i.e. trade credit is not extended; second, the supplier extends trade credit. Each case is analyzed under both stable prices and inflationary conditions.

Consider the following activity when stable prices prevail. Goods for $\$100$ are purchased at the beginning of the year and sold at the end of the year for $\$130$. The outlay is financed by a loan carrying 1 percent interest per quarter. The corresponding income statement is presented in Panel A of Exhibit 3 (first row). Consider now the

Exhibit 3. Income statements, a case of a single activity

	Sales (S)	Costs (C)	Balance (S-C)	Interest (R)	Net Income (NI)
Panel A: no credit extended					
Stable prices	\$130.00	\$100.00	\$ 30.00	\$ 4.06 ^b	\$ 25.94
Inflationary conditions ^a	158.02	100.00	58.02	26.49 ^b	31.53
Restated items	158.02	121.55	36.47	4.94 ^c	31.53
Panel B: supplier's credit for one quarter					
Stable prices	\$130.00	\$100.00	\$ 30.00	\$ 3.03 ^b	\$ 26.97
Inflationary conditions ^a	158.02	100.00	58.02	19.27 ^b	38.75
Restated items	158.02	121.55	36.47	-2.28 ^c	38.75
Restated cash flow	158.02	115.76	42.26	3.51 ^c	38.75

^a 21.55% per annum.
^b Interest actually paid.
^c Derived number: (S-C) minus NI.

same activity under inflationary conditions where prices increased by 5 percent per quarter (21.55 percent over the year). The interest is fully inflation compensated; i.e. it is 6.05 percent per quarter (derived by Eq. 2). The net income, as computed in Exhibit 3 (second row), is \$31.53, which is equal, in real terms, to the pre-inflation net income (1.2155×25.94). Applying Eq. (7), we obtain:

$$-R_c = 31.53 - (36.47) = 4.94$$

This figure, which is presented in the third row in Panel A of Exhibit 3, equals the restated, pre-inflation interest expense. This result suits the case that the accrued figures coincide with the cash-flow figures.

Suppose now that the supplier provides a one-quarter trade credit for his goods without charging interest. The corresponding income statements under both stable prices and inflationary conditions are presented in Panel B of Exhibit 3. The interest expenses are lower and the net income figures are higher than those in Panel A since the payment for the inputs is delayed.

The restated income-statement items, as shown in the third row in Panel B of Exhibit 3, deserve special analysis because this is the result of applying IAS 29, para. 24. As can be seen, the current-cost net income (38.75) is higher than the balance between the restated sales and costs (\$36.47); this is because the accrued cost is restated rather than the outlay which took place one quarter later. Applying the proposal to derive the restated financial expenses results in a negative “restated” interest expense (–\$2.28) which is, of course, nonsense. The restated interest expense can be derived from the cash flow figures, as illustrated in the last row of Exhibit 3 (\$3.51, which is equal, in real terms, to the pre-inflation figure). But the cash-flow figures usually are not available.

The numerical example shows that the restated income-statement items cannot be used for deriving the restated interest expenses. But these restated figures can be used for planning and control purposes, where inter-year or intra-year, *ex post* and *ex ante*, input and output figures are compared. For example, the ratio of sales to costs of the restated figures of the example is 1.3, as it was when stable prices

prevailed. Another example of the usage of the restated income-statement items is for intra-year trend analysis, shown in Panel C of Exhibit 2. When interim reports are prepared, IAS 29 para. 24 should be applied at the end of each interim period anew. Consider the illustration in Exhibit 2; the restated report at the end of Quarter 2, for example, is:

	<u>Quarter 1</u>	<u>Quarter 2</u>	<u>Total</u>
Index	1.0500	1.1025	
Sales	297.68	297.68	595.36
Purchases	<u>-275.63</u>	<u>-275.63</u>	<u>-551.26</u>
Balance	22.05	22.05	44.10

In summary, the IAS 29 extra requirement to restate income-statement items provides important figures to be used for planning and control purposes, not for measuring income or interest expenses.

Summary and Conclusions

The model for income measurement underlying IAS 29 is formulated and illustrated in order to clarify the stipulated requirements. The role of interest under the specified model is also analyzed. The model is extended by applying a novel procedure for partitioning the total current-cost net income into realized and nonrealized portions, to provide valuable information to the users of the statements. This partitioning is superior to an alternative way of reporting income from transactions and from finance, as may be implied from para. 26 of IAS 29.

The requirement to restate income-statement items is not related to income measurement; it provides restated input and output figures to be used for planning and control purposes. Thus, this procedure should be used to provide auxiliary information, especially when the level of transactions is not uniform over the year and when interim reports are provided. The proposal to derive restated interest expenses from the restated income-statement items may provide meaningless figures, especially when there is a discrepancy between the accrual and cash-flow dates.

The analysis in this paper suggests that IAS 29 should be classified within Dewhirst's two higher level accounting theory models, as described in a recent paper in this journal:¹⁸ the Substance-Oriented Model, which "emphasizes both the balance sheet and income statement to represent the economic situation of the accounting entity", and the Needs-Oriented Model, which emphasizes "user decision-making information satisfaction", (p. 107). The proposals to partition the current-cost net income into realized and nonrealized income and to provide auxiliary restated income-statement items are in line with these two models.

Notes

1. International Accounting Standards Committee, *International Accounting Standard 29, Financial Reporting in Hyperinflationary Economies* (London: IASC, July 1989).

2. Personal communication with IASC, May 1990.
3. For example, the Institute of Certified Accountants in Israel issued on July 10, 1989, Standard No. 50 which implements para. 24 of IAS 29. It should provide additional information to the prevailing inflation-accounting practices.
4. Robert T. Sprouse states that "the balance sheet embodies the most fundamental elements of accounting theory, from which the essential elements contained in the income statement are necessarily derived" (p. 90), Sprouse, Robert T., "The Balance Sheet – Embodiment of the Most Fundamental Elements of Accounting Theory" in Stone, W.E. (ed.), *Foundation of Accounting Theory* (Gainesville, FL: University of Florida Press, 1971), 90–104.
5. This procedure has been used, for example, by the Institute of Certified Accountants in Israel in its *Standard No. 23: Information on the Effect of Price Level Changes on Companies Income* (Tel Aviv: ICAI, October 1981).
6. Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 33 – Financial Reporting and Changing Prices* (Stamford, CN: FASB, 1979).
7. SFAS No. 33 required disclosing current-cost income in average year's dollars and using both general inflation and specific price changes for restatement purposes.
8. To arrive at current-cost net income, the current-cost of sales, rather than historical-cost of sales, should be charged against sales. This means that the following variable should be added to the recorded cost of sales:

$$(a) \text{COS}_c - \text{COS}_h$$

where COS = cost of sales

$$(b) \text{COS}_h = I_{t-1,h} + \text{PUR} - I_{t,h} = \text{PUR} - (I_{t,h} - I_{t-1,h})$$

= historical cost of sales

where PUR = purchases

$$(c) \text{COS}_c = I_{t-1,c} + \text{PUR} - I_{t,c} = \text{PUR} - (I_{t,c} - I_{t-1,c})$$

= current cost of sales

Calculating equation (a), using equations (b) and (c), we obtain:

$$\text{COS}_c - \text{COS}_h = -(I_{t,c} - I_{t-1,c}) + (I_{t,h} - I_{t-1,h})$$

Since the cost of sales are recorded with a minus sign in the income statement, the cost of sales adjustment in calculating the current-cost net income is

$$\Delta I = (I_{t,c} - I_{t-1,c}) - (I_{t,h} - I_{t-1,h})$$

Given that IAS 19 requires that all items are stated in end-of-year currency and that inventories are considered as nonmonetary items, $(1+p)I_{t-1,c}$ should be considered rather than $I_{t-1,c}$, therefore:

$$\Delta I = (I_{t,c} - I_{t-1,c}) - pI_{t-1,c} - (I_{t,h} - I_{t-1,h})$$

Developed by Shashua in Shashua, L., Y. Goldschmidt, and J.S. Hillman, "The Gearing Adjustment in Current Cost Profit Measurement: Analysis and Clarification", Department of Agricultural Economics Working Paper No. 22, University of Arizona, Tucson, 1983.

9. Under the financial reporting at N.V. Philips Industries, a variable equivalent to $pM_{t-1,c}$ is deducted from the financial expenses in hyperinflationary countries. Enthoven, Adolf J.H., *Current Value Accounting – Its Concepts and Practice at N V Philips Industries. The Netherlands* (Dallas, TX: Center for International Accounting Development, University of Texas, 1982).
10. Shashua, L. and Y. Goldschmidt, "The Specific Role of Interest in Financial and Economic Analysis under Inflation: Real, Nominal or a Combination of Both," *American Journal of Agricultural Economics* (May 1985), 377–383.
11. SFAS No. 33 required calculating three income components: (1) realized income – "Income from continuing operations" (under both general and specific price change); (2) nonrealized income – "Gains from decline in purchasing power of net amounts owed"; and (3) "Excess of increase in specific prices over increase in the general price level".

12. Evans, K. and R. Freeman, "Statement 33 Disclosures Confirm Profit Illusion in Primary Statements," *FASB Viewpoints* (June 24, 1983); Grant, J.L., "Inflation's Full Impact on the Bottom Line," *Business Week* (February 7, 1983), 8; Hart, P.J., "Accounting for Inflation in the United States," *National Tax Journal* (September 1980), 247-255.
13. This aspect of IAS 29 differs considerably from that of SFAS No. 33, where the latter's requirement, which follows Eq. (5), provides misleading income information when loans finance inventories. See Goldschmidt, Y. and L. Shashua, "Distortion of Income by FASB Statement No. 33," *Journal of Accounting, Auditing and Finance* (Fall 1984), 54-67.
14. For example, the aggregate balance sheet for the US nonfinancial corporate business shows that 60-70 percent of the inventories are financed by loans. Board of Governors of the Federal Reserve System, *Balance Sheets for the US Economy 1949-1988* (Washington, DC, October 1989).
15. Shashua, Goldschmidt and Hillman, *ibid*.
16. In addition to the balance-sheet items, intra-year transactions such as investments, disposal of assets-equity additions and interim dividends should be restated, and added to the relevant variables.
17. The Institute of Certified Accountants in Israel, Standard No. 50, para. 13, July 1989.
18. Chan, Anthony M., "The Pattern of the Theoretical Basis of IAS: Accounting Theory Models at the International Level," *International Journal of Accounting* (Fall 1986), 101-117. Based on Dewhirst, John F. "A Classification and Analysis of Financial Accounting Theory Models." Faculty of Administrative Studies, York University, unpublished.

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Accounting Disclosure Methods and Economic Development: A Criterion for Globalizing Capital Markets

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Key words: International accounting disclosure methods; Economic development; Global capital markets

Abstract: *This study has two objectives. The first is to evaluate the effect of the interaction of capital market equity transactions and the accounting disclosure method on economic growth. Second, the effect of each accounting disclosure method on the relationship between the capital market equity transaction and economic growth is examined. The study hypothesizes that accounting disclosure methods stimulate economic growth through its effect on the efficiency of markets capital accumulation and distribution. Such market forces nurture economic development by preventing the economy from venturing into unprofitable technologies and encourages economies of scale. The results are consistent with the hypothesis. The accounting disclosure method 1 (Belgium/France) has the greatest positive impact on economic growth. The results suggest that the effect of accounting disclosure methods on economic growth ought to be the criterion to choose from among alternative disclosure paradigms. These results have implications for harmonization of international accounting disclosure practices as well as globalization of security markets.*

Introduction

The International Accounting Standard Committee (IASC) was established in 1973 to harmonize international accounting disclosures. Four years later the United Nations Commission on Transnational Corporations took the initial step toward a stated United Nations goal of the standardization of international accounting and reporting practices.¹ The degree to which the world's security markets have become globalized since that period has invigorated the debate over the harmonization of accounting disclosure. According to the International Stock Exchange Official Yearbook, there are 2107 securities listed in foreign capital markets, of which 5 percent are listed in

US markets. The Security and Exchange Commission (SEC) in the United States has expressed concern over the relatively low foreign listing in US capital markets. In March, 1985, the commission proposed a method to harmonize the accounting disclosure requirements in the United States, United Kingdom, and Canadian capital markets (see SEC Release No. 33-6568).

The main purpose of this study is to evaluate the impact of the interaction between accounting disclosure methods and the capital markets equity transactions on economic growth. The study hypothesizes that the accounting information disclosures stimulate economic growth through its effect on capital accumulation. The study also compares the effect of each accounting disclosure method on the relationship between capital markets equity transactions and economic growth. The results of this study are consistent with the hypothesis.

In this study, economic growth is used to measure economic development, an approach consistent with Bornschier et al. (1978), Kahn (1989), and the orthodox paradigm of economic development.²⁻⁵ This philosophical orientation to economic development conflicts with the political economy paradigm but is appropriate for the analysis of countries with organized capital markets. For these countries, the efficient market capital accumulation and distribution are expected to create economies of scale. Such capital accumulation and allocation nurture the development of large-scale production leading to economies of scale. Thus, the accounting information disclosure stimulates efficient market capital accumulation and allocation resulting in economies of scale which increase economic growth.

The remainder of the paper is organized as follows. The next section discusses the capital market and economic growth. The model used is then developed. The remaining sections describe the sample and data used and present the results and implications.

Capital Market and Economic Growth

Financial information plays an important role in the intertemporal resource allocation under conditions of certainty. The efficiency of capital markets depends on information production and disclosures. The relevant information of future economic activities determines the supply and demand of securities. Figure 1 indicates the relationship among financial information disclosure, capital market efficiency, and economic growth.

Figure 1 shows that financial information disclosure minimizes the capital market uncertainty.⁶ Thompson (1967) and Williamson (1975) have crystallized a similar sentiment, noting that the major threat to any market is the inability to protect the core market technology from the environmental uncertainty.^{7,8} The reduced market uncertainty through information disclosure has two major effects on the capital markets: it prevents capital market failure and encourages more investors to buy and sell securities in the capital markets. For example, suppose there is a general lack of financial information on stock trades in the capital market. Potential buyers would discount the price offered for each stock to reflect the net present value of "opportunism".⁹ Since the buyer cannot tell whether a stock is free from opportunism,

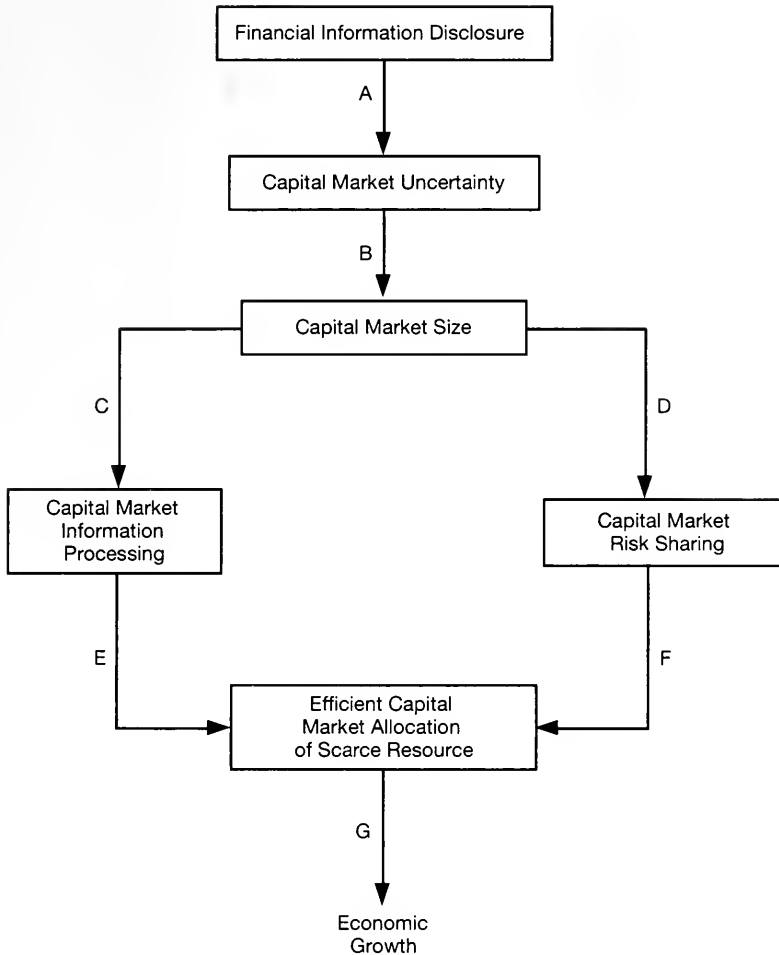


Fig. 1. The role of Information in economic growth

- A. Accounting information disclosure minimizes the capital market uncertainty.⁶ This is accomplished through the disclosure of the value and risk of each asset traded on the capital market.
- B. The reduced capital market uncertainty encourages more investors to buy and sell securities in the capital market. It has been documented that higher capital market uncertainty induces security buyers to underprice high-quality security. Consequently the seller of such security will withdraw from the market, which reduces the size of the market.
- C. The capital market size affects both the market information processing (denoted C) and risk sharing (denoted D). Other things being equal, the larger the capital market, the more efficient is the information processing.^{15,16} The capital market information processing generates the security prices. The security prices effect the ability of the capital market to efficiently allocate scarce resources (denoted E).
- D. The larger the marked portfolio, the smaller the market risk per asset is and the easier it is for investors to hold/purchase an efficient portfolio of securities. Fama (1978) argues that the idiosyncratic risk can be diversified away in a large and efficient capital market. Lower market risk implies lower cost of capital since investors want a rate of return commensurate with the level of perceived risk. The optimal risk sharing leads to an efficient allocation of savings (denoted F).
- G. The capital market helps in the development of savings which effect economic growth through investment.²⁰ The capital market transfers the accumulated savings to the most efficient investment opportunity. This function of the capital market stimulates economic growth.

all stock would be discounted at an average rate. However, at the discounted price, owners of opportunism-free stock would tend to withdraw from the capital market. This is because their stock is under-priced, while bad stock is overpriced. Therefore, the discounted price for bad stock cannot be sustained. Eventually, potential buyers would discover that their discounted price is overstated. The only price that would sustain an equilibrium is a price based on the assumption that only bad stock is brought to the capital market. This realization would stimulate rapidly declining stock prices, which would lead to market failure. Thus, accounting information is essential for the capital market to accumulate and distribute capital efficiently.

A number of studies have analyzed the effect of information on capital market. Lee (1987) has demonstrated analytically that inadequate information disclosure encourages security buyers to underprice high-quality securities.⁶ Consequently, the sellers of the security look for an alternative financing source in place of the inefficient capital market. The withdrawal of high-quality securities reduces the capital market size. Similarly, Lev (1988) has documented that information asymmetries motivate investors to withdraw rationally from trading on specific securities or from the capital market altogether.¹⁰ Other studies have associated information asymmetry with high transaction costs, which in turn reduces trade volume and/or number of market traders.¹¹⁻¹⁴ Thus, inadequate information disclosure leads to a thinness of the capital market as well as high transaction cost.

The capital market size affects (1) the market information processing and (2) the market risk sharing. These two factors are denoted in Fig. 1 as C and D, respectively.

Other conditions being equal, the larger the capital market, the more efficient is the information processing. Simon (1979) and Tversky and Kahneman (1974) have documented that the individual decision maker operates in a bounded rationality.^{15,16} For this reason they argue that information processing is more efficient in a larger market than a small one. The information aggregation in the larger capital market, stimulates the optimal investment decisions and prevents biased decisions due to bounded rationality. This is because decisions are made by a large number of sophisticated investors. Thus, the information aggregation and processing decide the market prices which determine the ability of the capital market to allocate scarce resource to the most efficient investment opportunity.

Another factor that affects capital market efficiency is risk-sharing. The larger the market portfolio, the smaller the market risk and the easier it is for investors to hold/purchase an efficient portfolio of securities, *ceteris paribus*. Fama (1976) has demonstrated that the idiosyncratic risk is diversified away in a large and efficient capital market.¹⁷ Similarly, Lee (1987) has documented that the thinness of the Taiwanese capital market encourages suboptimal risk-sharing, which hampers the development of new technologies.⁶ Similarly, inadequate risk-sharing increases the cost of capital, since investors want a rate of return commensurate with the level of perceived risk.^{18,19}

A high cost of capital prevents an economy from venturing into new and profitable technologies. Thus, optimal risk-sharing facilitates efficient allocation of scarce resources. The efficient capital market stimulates capital accumulation which in turn leads to increased economic growth.²⁰ This study hypothesizes that an appropriate interaction between accounting disclosure methods and the capital market would

improve economic development. Bornschier et al. (1978) and Kahn (1989) used the change in economic growth to measure economic development.^{2,3} Such a measure is consistent with the orthodox paradigm of economic development. Because the countries examined in the present study have organized capital markets, the orthodox paradigm matches their philosophical orientation to economic development. Thus, economic development is measured using the orthodox approach.²¹

The above discussion links accounting disclosure to capital market efficiency and the later factor to economic development. The first linkage is well documented in the accounting and finance literature. Accounting information disclosure increases the efficiency of the capital market in accumulating and distributing capital. This factor nurtures economic development because it prevents the economy from venturing into unprofitable technologies and encourages economies of scale. The linkage between capital accumulation and economic development was documented in Lucas (1988).²²

Model

A regression model is used to evaluate the effect of the interaction between the accounting information disclosures and the capital markets equity transactions on economic growth. The relationship between the dependent and the independent variables is expressed as follows:

$$RGGNP_{it} = a + bMONS_{it} + cEMVT_{it} + dACM_{it} + zEMVT_{it} * ACM_{it} + U_{it} \tag{1}$$

$t = 1, \dots, T$
 $i = 1, \dots, n$

where

$$RGGNP_{it} = \frac{GNP_t - GNP_{t-1}}{GNP_{t-1}}$$

absolute value of RGGNP was also used and the results are essentially the same. Similar measures are used in Kohn (1989).³
the capital markets equity transaction of country *i* at time period

- GNP_t = gross national produce for country *i* at time period *t*.
- $MONS_{it}$ = money supply of country *i* at time period *t*.
- $EMVT_{it}$ = the capital markets equity transaction of country *i* at time period *t*.
- ACM_{it} = accounting disclosure method used in country *i* at time period *t*. The accounting method is based on Nair and Frank (1980).^{23,24}
- U_{it} = a white noise associated with the model and *a* is the constant term.
- t* = 1980 to 1986.

Additional discussions of some of the variables used in the study are warranted Based on the discussion in the previous section (Fig. 1), the interaction between the capital market (equity traded) and accounting disclosure method (ACM) is expected to affect economic growth. The accounting information disclosure increases the capital accumulation and efficient allocation of resources which invigorates rapid

economic growth. On the other hand, inadequate disclosure nurtures a thinness of the capital market, inefficient allocation of resources, and poor economic development.

Money supply was added as one of the independent variables in Eq. (1) because it affects economic growth through its impact on interest rates and investments. For example, an increase in money supply decreases the interest rate which in turn stimulates investment.^{25,26} On the other hand, a decrease in money supply increases interest rates and reduces the level of investment in an economy.

The accounting methods (e.g., ACM) variable is coded from 1 to 7 to correspond to the seven accounting disclosure methods identified in Nair and Frank (1980).²³ However, this coding imposed an arbitrary scale that might differ from the true scale differences among the seven accounting disclosure methods.

To examine whether the imposed scale differs from the true scale, the restriction imposed in Eq. (1) was relaxed and the equation was reformulated as follows:

$$\begin{aligned} \text{RGGNP}_{it} = & a + b\text{MONS}_{it} + c\text{EMVT}_{it} + e_1D_{2it} + e_2D_{3it} + e_3D_{4it} + \\ & e_4D_{5it} + e_5D_{6it} + e_6D_{7it} + d_1\text{EMVT}_{it} * D_{2it} + d_2\text{EMVT}_{it} * D_{3it} \\ & + d_3\text{EMVT}_{it} * D_{4it} + d_4\text{EMVT}_{it} * D_{5it} + d_5\text{EMVT}_{it} * D_{6it} \\ & + d_6\text{EMVT}_{it} * D_{7it} + U_{it} \end{aligned} \quad (2)$$

where

D_2 = 1 for accounting disclosure method 2 and 0 otherwise.

D_3 = 1 for accounting disclosure method 3 and 0 otherwise.

D_4 = 1 for accounting disclosure method 4 and 0 otherwise.

D_5 = 1 for accounting disclosure method 5 and 0 otherwise.

D_6 = 1 for accounting disclosure method 6 and 0 otherwise.

D_7 = 1 for accounting disclosure method 7 and 0 otherwise.

The use of dummy variables to represent the accounting disclosure method imposed little or no restriction in Eq. (2).²⁷ Equations (1) and (2) were compared using an *F*-test. This *F*-test was used to test the null hypothesis of no scale difference against the alternative that a scale difference has occurred. The critical *F*-value of 1.83 is more than the calculated *F*-value of 0.005. This result suggests that the scale imposed in Eq. (1) does not differ significantly from the true scale used in Eq. (2) at the 0.05 level. Thus, the coding of accounting methods from 1 to 7 does not appear to bias the coefficient estimates of Eq. (1).

Model Specification

Two model specification tests were performed in this paper: the RESET (regression specification error test) and the Hausman test. The RESET was originally suggested by Ramsey (1969) and extended by Thursby (1981, 1985).^{28–30} This test was applied to check omitted variables, incorrect functional form, and non-independence of regressors. The result of this test shows that the model employed in this paper is not misspecified (see diagnostic check statistics in Table 2).

The second test applied was a specification test proposed by Wu (1973) and Hausman (1978) to check for the presence of a simultaneous equation bias.^{31,32} A simple way of implementing the Wu-Hausman test is to regress the suspected

endogenous variable (in this case, capital market equity transactions – EMVT) onto the instrument set and then add the fitted values into the original regression, that is, Eq. (1). A standard test of the significance from zero of the coefficient of this generated variable constitutes a test for exogeneity (a non-zero coefficient indicates endogeneity) (Ref. 32, p. 1260).

The exogeneity test was performed for Eq. (1) with EMVT as the suspected endogenous variable. The fitted values of the estimated EMVT was added as an additional regressor in Eq. (1). Re-estimating Eq. (1) by OLS (ordinary least square) yielded a nonsignificant *F*-value (see diagnostic Hausman *F*-value in Table 2). The result of the Hausman *F*-test shows that the hypothesis of the econometric exogeneity of capital market equity transactions cannot be rejected at the 0.05 level. Thus no simultaneous equation bias was observed.

Sample and Data

The International Finance Corporation (IFC) Emerging Markets Database was used as a starting point to identify countries with organized capital markets. Thirty-six countries with an organized capital market were identified. The total dollar amount of annual capital markets equity transactions for each country from 1980 to 1986 was obtained from the IFC Emerging Markets Database.

The initial sample was matched against the accounting disclosure methods provided in Nair and Frank (1980).²³ This classification was used to assign an accounting disclosure method to each country. Despite the large sample that Nair and Frank employed, eight of the countries in the initial sample were not included in their classification. These eight countries were eliminated from the present study because of the insufficient information on their accounting disclosure methods and missing data on market transactions.

Data on GNP, money supply, and the exchange rate from 1979 to 1986 were obtained from International Financial Statistics. The end of the year exchange rate was used to convert each variable into US dollars.³³ Finally, a sample of 28 countries was identified and used in the present study. Each country has seven years' data (1980–1986); 1979 data were used to calculate the change in GNP. The classification of the sample into three major market economies is provided. These markets are the European Economic Community (EEC), industrial, and non-industrial market economies. However, some members of the EEC are also members of the industrial or non-industrial market economies.

Table 1A lists the members of the EEC studied and their accounting disclosure methods. Eight member countries were studied. Three countries have the accounting disclosure method 1, two have the method 4 and the rest have methods 6, 3 and 7.

A similar measure is provided for the industrial market economies in Table 1B. The majority of these countries have accounting disclosure methods 1, 3, and 4. The classification of countries into industrial or non-industrial market economies is based on the World Development Report 1983 published by the World Bank.

Table 1C provides a list of non-industrial countries and their accounting disclosure methods. Interestingly, accounting disclosure method 1 is the most commonly used

Table 1. Sample and Accounting Disclosure Methods

A: European Economic Community				
Country	Accounting disclosure method	Country	Accounting disclosure method	
Belgium	1	Italy	7	
Denmark	6	Netherlands	4	
France	1	UK	4	
Germany	3			
Greece	1			
B: Industrial market economies				
Country	Accounting disclosure method	Country	Accounting disclosure method	
Australia	2	Netherlands	4	
Belgium	1	Spain	1	
Canada	4	Sweden	6	
Denmark	6	Switzerland	7	
France	1	UK	4	
Germany	3	USA	3	
Italy	7	South Africa	2	
Japan	3			
C: Non-industrial market economies				
Country	Accounting disclosure method	Country	Accounting disclosure method	
Argentina	5	Mexico	3	
Brazil	1	Nigeria	2	
Colombia	1	Pakistan	5	
Greece	1	Philippines	3	
India	5	Venezuela	3	
Malaysia	2	Zimbabwe	4	
		Singapore	2	
D: The foreign security listings across countries (1986)				
Country	Foreign Listing (F)	Total Listing (T)	Ratio of (F) to (T) ^a	Accounting disclosure methods
Switzerland	194	339	0.572	7
Netherlands	242	509	0.475	4
Belgium	140	331	0.423	1
Germany	181	673	0.269	3
France	226	1100	0.205	1
UK	512	2613	0.196	4
Canada	51	1065	0.048	4
USA	109	2371	0.046	3
Japan	52	1551	0.034	3
Denmark	7	281	0.029	6
Australia	31	1193	0.026	2

Classifications of countries into industrial and non-industrial economies are based on World Development Report 1983 – published for The World Bank, Oxford University Press 1983. The groupings of countries according to accounting disclosure requirements is obtained from Nair and Frank (Ref. 23, p. 436).

^aPercentage of foreign security listing to total market listing. The data for USA include listing in the New York and American markets. Panel D consists of countries whose data are available. The foreign and total listings are obtained from *The London Stock Exchange Quarterly*.

within the three market economies studies. Over 20 percent of the countries in the EEC, the industrial, and non-industrial markets, use accounting disclosure method 1. Other common disclosure methods used among the non-industrial group are methods 2, 3, and 5.

Table 1D provides the foreign securities listed in each country and the total capital market listing in each country for which the data are available in 1986. The

Table 2. Estimate of the Effect of the Interaction of Capital Markets and Accounting Disclosure Methods on Economic Growth

Sample groups	Estimate of coefficients on Eq. (1) ^a						Diagnostic check statistics	
	Constant	MONS	EMTV	ACM	EMTV*ACM	\bar{R}^2	RESET <i>F</i> -value ^b	Hausman <i>F</i> -value ^c
Total sample								
<i>B</i> -value	-0.1331	0.0000068	-0.0000034	0.0063	0.0000016			
<i>t</i> -ratio	(-2.48)	(0.32)	(-1.05)	(0.46)	(1.62)			
Prob.	0.006 **	0.373	0.147	0.322	0.050 **	0.33	0.030	0.667
EEC countries								
<i>B</i> -value	-0.2442	0.0019	-0.0000053	0.0121	0.0000002			
<i>t</i> -ratio	(-2.97)	(1.43)	(-0.72)	(0.56)	(0.99)			
Prob.	0.000 **	0.079 *	0.238	0.289	0.164	0.45	0.210	1.918
Industrial markets								
<i>B</i> -value	-0.0028	-0.0000063	-0.0000038	-0.0092	0.0000016			
<i>t</i> -ratio	(-0.05)	(-0.35)	(-1.45)	(-0.72)	(2.01)			
Prob.	0.479	0.363	0.075 *	0.237	0.023 **	0.22	0.001	2.091
Non-industrial markets								
<i>B</i> -value	-0.0649	0.0000007	-0.00003	-0.060113	0.0000013			
<i>t</i> -ratio	(-0.66)	(1.42)	(-1.07)	(-1.87)	(1.80)			
Prob.	0.254	0.079 *	0.143	0.032 **	0.037 **	0.33	0.015	0.387

^aMONS is the money supply. EMTV is the total equity market transactions. ACM is the accounting disclosure method. EMTV*ACM is the interaction of capital markets and accounting disclosure methods.

^bRESET *F*-value is for testing the null hypothesis of no specification error against the alternative that a specification error has occurred which results in a non-zero disturbance mean.

The critical RESET *F*-values are 3.00, 3.23, 3.15, and 3.15 for total sample, EEC industrial and non-industrial countries, respectively.

^cHausman *F*-value is used for testing the null hypothesis of no simultaneity bias against the alternative that a simultaneous equation bias has occurred. The calculated Hausman *F*-values reported in Table 2 are respectively less than the critical *F*-value of 3.84, 4.08, 4.00 and 4.00. \bar{R}^2 is the coefficient of determination adjusted for degrees of freedom.

**significant at the 0.05 level. *significant at the 0.10 level.

data show that the Continental European countries seem to attract more foreign listings than any other region. In particular, the UK market has the largest number of foreign listings, while Switzerland has the highest percentage of foreign listings, compared to total market listing. More interestingly, countries within the accounting disclosure method 1 have the highest average percentage of foreign listings than any other method.

The two method 1 countries in Table 1D, Belgium and France, have a ratio of foreign listings of 0.423 and 0.205, respectively. This analysis suggests that the accounting disclosure method 1 attracts more foreign listings relative to the total capital market listings than any other accounting disclosure method.

Results and Analysis

Table 2 provides the results of estimating Eq. (1) for the total sample, the EEC the industrial, and non-industrial markets. The results provide empirical evidence on the effect of interaction between capital markets and accounting disclosure methods on economic growth.

The results of estimating Eq.(1) for the total sample show that the interaction between capital market equity transactions and accounting disclosure methods (EMTV * ACM) has a significant positive impact on economic growth. The coefficient of

EMTV * ACM is 0.0000016 and significant at the 0.05 level. However, the coefficients of money supply (MONS), equity transaction (EMTV), and accounting disclosure methods (ACM) are not significant at the 0.05 level. The most important point is that the interaction between capital market equity transactions and accounting disclosure methods has the greatest impact on economic growth. Thus, the results are consistent with the hypothesis that accounting information disclosures facilitate efficient allocation of savings, which in turn improves economic growth.

A similar result was not observed for the EEC. The coefficient of EMTV * ACM is not statistically significant at the 0.10 level. However, money supply has a significant positive impact on economic growth. The coefficient of money supply is 0.0019 and significant at the 0.10 level. The implication of this result is that the EEC needs to develop an appropriate accounting disclosure method. The current accounting disclosure methods are not an effective catalyst of economic growth. The full implementation of the fourth, seventh, and eighth directives might change the observed relationship between the accounting disclosure methods and economic growth. These three directives are the most relevant to the harmonization of corporate financial reporting in Europe. The accounting requirements of these directives represent a compromise between the British (fair value) method and the legalistic-prescriptive Continental approach. However, there is still considerable room for variation in disclosure requirements among member countries, as can be seen in the rules permitting abridged versions or derogation of certain clauses at the discretion of each country (see fourth directive and Ref. 34).

Equation (1) was separately fitted for industrial and non-industrial countries. The results are consistent with the total sample, indicating that accounting disclosure improves economic growth through its effect on capital market equity transaction. For the industrial market, the coefficient of EMTV * ACM is positive and statistically significant at the 0.05 level. However, the coefficient of EMTV has a negative sign and is significant at the 0.05 level. This result provides more support for the hypothesis that the interaction between equity market transactions and accounting disclosure methods stimulates economic growth. A similar result was observed for the non-industrial countries except that the money supply also improves economic growth. The coefficient of EMTV * ACM is positive and significant at the 0.05 level. Thus, the empirical results are consistent with the study hypothesis.

Table 3 provides the results of estimating Eq. (2). This equation was used to evaluate which accounting disclosure method has the greatest positive impact on economic growth by way of capital markets. The result shows that money supply has no significant effect on economic growth. This result is consistent with that reported for the total sample in Table 2. From the coefficients estimates of Eq. (2), the relationship between the dependent and independent variables was derived for each of the seven accounting disclosure methods. The most important point is that capital market equity transactions have the greatest positive effect on economic growth for accounting disclosure method 1. Nair and Frank (1980) referred to this disclosure method as the Belgium/France method.²³ The method is based on the company and tax laws of each country.³⁵ It is conceivable, however, that the fourth directive might have influenced this method. A similar result was observed for accounting disclosure method 7. For this method, the coefficient of EMTV is positive,

Table 3. Comparison of the Effect of Each Accounting Disclosure Method on the Relationship between the Capital Market and Economic Growth.

Variables	Estimate of coefficients on Eq. (2)			
	B-value	t-ratio	Prob.	\bar{R}^2
constant	0.19145	(6.11) **	0.000	
MONS	-0.0000081	(-0.36)	0.359	
EMTV	0.000016	(2.32) **	0.010	
D ₂	-0.04325	(-0.88)	0.189	
D ₃	-0.02080	(-0.49)	0.309	
D ₄	-0.0538	(-1.04)	0.151	
D ₅	0.3398	(4.68) **	0.000	
D ₆	-0.01614	(-0.26)	0.399	
D ₇	-0.06349	(-0.97)	0.165	
EMTV*D ₂	-0.000018	(-1.90) **	0.029	
EMTV*D ₃	-0.0000161	(-2.33) **	0.010	
EMTV*D ₄	-0.0000164	(-2.36) **	0.009	
EMTV*O ₅	-0.0000759	(-4.89) **	0.000	
EMTV*D ₆	-0.0000194	(-1.47) *	0.072	
EMTV*D ₇	-0.0000155	(-2.27) **	0.012	0.26

N = 196 (28 × 7 years)

From the binary variable model above, the following equations were derived for each of the seven accounting methods.

Accounting method 1:

$$RGGNP = 0.1914 - 0.000008MONS + 0.000016EMTV$$

Accounting method 2:

$$RGGNP = 0.1482 - 0.000008MONS - 0.000003EMTV$$

Accounting method 3:

$$RGGNP = 0.1706 - 0.000008MONS - 0.0000001EMTV$$

Accounting method 4:

$$RGGNP = 0.1376 - 0.000008MONS - 0.0000004EMTV$$

Accounting method 5:

$$RRGNP = -0.1484 - 0.000008MONS - 0.00006EMTV$$

Accounting method 6:

$$RRGNP = 0.1753 - 0.000008MONS - 0.000003EMTV$$

Accounting method 7:

$$RRGNP = 0.1279 - 0.000008MONS + 0.000001EMTV$$

N is the number of observations; **Significant at the 0.05 level.; *Significant at the 0.10 level.

indicating a positive impact of EMTV on economic growth. However, the accounting disclosure method 1 has a higher coefficient of EMTV than Method 7.

A similar result was not observed for accounting disclosure method 2, 3, 4, 5, or 6. These methods have negative coefficients of EMTV. Thus, only accounting disclosure methods 1 and 7 improve economic growth through their effect on the capital markets. The results in Table 3 show that the relationship between economic growth and capital markets depends on the accounting disclosure method used in each market. These results are consistent with the hypothesis that the accounting disclosure method affects economic growth by way of capital market.

Summary and Implications

There are two major empirical results in this paper. First, the interaction between accounting disclosure methods and capital market equity transactions affects economic

growth positively. This finding is consistent with the study hypothesis that accounting information disclosure stimulates economic growth through its effect on the market capital accumulation.

The second interesting result is that capital market equity transactions have their greatest impact on economic growth for the accounting disclosure method 1. Accounting disclosure methods 1 (Belgium/France) and 7 (Italy/Switzerland) are the only methods that improved economic growth.

These results have implications for the international harmonization of accounting disclosures. One major implication of the results is that the effect of the accounting disclosure method on economic growth ought to be a logical criterion for choosing among alternative disclosure methods. The disclosure methods that stimulate economic growth should play a greater role in the development of international disclosure requirements.

Such a role would stimulate the development of global security listings. The data in Table 1 show that countries with accounting disclosure method 1 (Belgium/France) have the highest average percentage of foreign security listings of any method. These findings suggest that the harmonization of international disclosure requirements blended with the Belgium/France disclosure method would invigorate global economic prosperity as well as the globalization of the capital markets. Further research is needed to develop an appropriate framework for harmonization since globalization of the security markets would not be fully realized in the presence of heterogeneous accounting disclosure requirements.

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Educating Accounting in China: Current Experiences and Future Prospects

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Key words: Chinese accounting; Education reform; Chinese accountants

Abstract: *China began her ambitious economic reform in the late 1970s. Since then the country has experienced tremendous changes. The key change has been the transfer of the centrally planned economy into a planned market economy as China turns into an economy exposed to market forces. Commensurate with this change, accounting education has gained increased prominence in China's economic reform as competent accountants are regarded as the cornerstone of an enterprise's success. This article presents a brief, yet critical, review of the history and current situation of China's accounting education, and then presents some suggestions for the development and reform of Chinese accounting education in the future.*

Introduction

Accounting, as a measurement and reporting information system, covers both micro- and macro economic activities. It concerns itself both with individual enterprises and with government administration and national economic accounts as well (Enthoven, 1973, 1981). It is a very important management tool not only for market systems, but also other forms of economic systems (AAA, 1978; Enthoven, 1977; Jensen and Edward, 1983; Ash 1985).

China, a country with a centrally planned economy, began her historic economic reform in the late 1970s. This reform involves all aspects of Chinese life, including the accounting system. The need for an effective accounting system was felt increasingly as economic reform development took hold, producing relatively independent entities requiring good planning and controlling.

As the operation of an effective accounting system depends on the availability of people trained to design, install, use and maintain them (Chandler and Holzer, 1981;

AAA, 1986; AECC, 1990), a sound accounting education system becomes indispensable to the success of the entire economic reform.

This article examines the evolution and current situation of accounting education in China and then presents some suggestions for the development and reform of Chinese accounting education in the future.

The Evolution

Although rather advanced recording activities have existed in China for more than 3000 years, they can only be described as bookkeeping until the beginning of this century (Guo, 1985). For many centuries, Chinese-style bookkeeping (single-entry records based on the movement of money or some physical goods) dominated. All bookkeepers were the products of master-apprentice training methods. Modern accounting education did not appear in China until the 1920s. Since then, it has experienced fairly rapid progress. The main stages of its evolution can be summarized as follows:

Initial Period (1920s-1949)

During the latter half of the nineteenth century, China became a semi-colonial country. Many Western countries established their concessions in China. With the inflow of Western capital and technology, business activities spread and native industries (mainly in the fields of spinning, coal mining, textiles, and domestic banking) emerged. As business activities expanded, the demands for modern bookkeeping or bookkeepers in China kept growing. From the beginning of the 1920s, some scholars who received their education abroad returned to China and made great efforts to develop modern accounting education in China.¹ Gradually, bookkeeping and accounting courses were taught at college and university level; even accounting majors or departments were established. During this period, the Western accounting educational systems, including some contemporary accounting textbooks, were introduced, and double-entry bookkeeping replaced traditional Chinese bookkeeping. However, neither Chinese accounting practice nor accounting education was fully developed owing to the less developed national economy and lack of essential business management skills.

Formation Period (1949-1957)

In 1949, the People's Republic of China was founded. Under a socialist economic system, the public (state) ownership of production means and a uniform national economy were adopted. In order to meet the needs of large-scale industrialization and centralized economic planning, it became imperative to establish a uniform industrial accounting system and to train a great number of qualified accountants. However, for political and economic reasons, China completely adopted the Soviet-style accounting systems and accounting educational program. During 1950–1957, the curriculum for accounting majors in all Chinese universities was simply modelled

after that of the Soviet Union. Some Soviet accounting scholars and experts were invited to China to conduct special training programs for accounting instructors across the country. Accounting research concentrated on the translation of Soviet accounting literature and textbooks or the interpretation of Soviet accounting regulations and standards. Furthermore, the curriculum for accounting majors in China emphasized ideological education, because the main objective of accounting education programs was to foster students to be loyal to socialism and to follow the government's political, economic, and financial policies in their accounting jobs.

Adjustment Period (1958–1965)

In 1958, China launched a three-year “Great Leap Forward” movement. Its attempt was to achieve impractically high targets of economic growth. There was an over-enthusiasm for so-called “destroy the old framework and build the new order” in all areas of the Chinese economy. A demand for “accounting reform” also appeared because of: (1) the accounting procedures copied from the Soviets were too complicated for “public popularization”; (2) there were significant differences between Soviet-style textbooks and Chinese economic and accounting reality; and (3) the ideological confrontation of the Sino-Soviet relationship led to a “free-of-Soviet-influence” attitude. This accounting reform resulted in some adjustments in Chinese accounting education programs.

- (1) *Amending the accounting curriculum.* Some accounting courses for specific industries, such as Accounting for Capital Construction Enterprises, Bank Accounting, Governmental Budgeting Accounting, Accounting for People's Communes, were added, in order to serve the reality of contemporary economic management better.
- (2) *Revising accounting textbooks.* The contents and terminology in accounting textbooks were revised to reflect Chinese reality more accurately. A conceptual framework consisting of definitions, objectives, functions, and natural attributes of accounting were developed in a more native sense.
- (3) *Replacing the debit-credit bookkeeping technique with the “plus-minus bookkeeping”.* The latter was formulated by Chinese accountants who claimed it to be understood and applied more easily and simply.²
- (4) *Emphasizing the application of accounting information in economic planning and controls.* Accounting should be regarded as a management tool for the national economy.

Even with the adjustments mentioned above, however, the Soviet pattern remained dominant in Chinese accounting education programs.

Stagnation Period (1966–1976)

During the “Cultural Revolution” of 1966–1976, accounting education completely vanished at the college level as a result of radical views towards management education and the intellectual class at large. The national accounting regulations (Uniform

Accounting System (UAS)) were regarded as “shackles” to be broken. Short-term training or on-the-job training replaced the regular accounting education programs. Faculty members were obliged to receive “re-education” or “ideological remoulding” in factories or on farms. Accounting education, and higher education as a whole, became the target of a bloody political battle which resulted in a ten-year void in China’s education history.

Expansion period (1977–Present)

China began her ambitious economic reform in the late 1970s. Since then, the country experienced tremendous changes. The key change has been the strategic shift from the centrally planned economy to a planned market economy, as China evolved into an economy much exposed to market forces. This development has great impact on Chinese accounting. With increasing adoption of new business patterns with multiple ownership, and more decision making powers granted to enterprise, managers at all levels demanded more accurate and timely information for their operation planning and control. As a result, the accounting practice and education program regained its momentum. Accounting majors at the college and university level were resumed and the enrolment of accounting students increased significantly. The accounting curriculum has been restored to the pre-Cultural-Revolution level and the debit-credit bookkeeping technique was reinstated and popularized again.

With increasing state inputs, the scope and structure of the accounting education program in China have improved steadily. In 1978, the graduate program for accounting was established for the first time in China’s history. The accounting curriculum was revamped, not only with added subjects suitable to the economic reform (such as management economics, financial analysis, auditing, and principles of computers), but also with the introduction of many accounting courses common in the West (Western Financial Accounting, Accounting Standards and Principles, Management Accounting, Western Auditing, etc.) (Lin, 1988). The objective of this new curriculum is to expand the students’ ability to understand market-oriented business, foreign investment, and international transactions.

At the same time, Chinese accounting professional organizations and educational institutions have developed academic exchanges with other countries through various channels, i.e. by inviting foreign scholars to lecture, sending faculty members and students to study abroad, or participating in international conferences, all of which have had a positive influence on the accounting education in China.

The System Structure

Besides some on-the-job training practice, two interrelated accounting education systems exist in China. One is the professional training system – training accounting personnel with some first-hand experience. Under that system, the Administrative Institutes of Financial and Accounting Staff, directed by the Finance Bureaus at the provincial level, take the lead. Students join accounting staff from accounting departments of various factories, industrial administrative bureaus, and government

branches with three to five years' working experience. They must complete 15–20 courses in two to three years' full-time study. The main purpose of this system is to provide professional training to those without formal accounting schooling or to update their professional knowledge. Students will return to their original work units after the period of study. In addition to the Administrative Institutes, there are also some part-time programs for the professional training. For example, evening schools, correspondence education, television education, vocational education, and even directed self-taught education can all provide accounting training programs for accounting staff on a part-time study basis.

Another system, or the main accounting education system, is the study program through regular schooling at college and university levels. It can also be divided into two categories.

Professional Technician Program

This is a two-year program to train accounting clerks. Students are enrolled from junior high (or some senior high) school graduates. The program emphasizes training in bookkeeping and some basic accounting techniques. Accounting concepts and knowledge of other related disciplines are taught to a limited extent. Most students will be assigned to work as clerks in accounting departments in small factories, local government institutions, and other organizations.

Higher Education Program

This is the accounting program at university level, designed to train accounting personnel to higher standards.

Undergraduate program

Students are high school graduates who have passed the national uniform entrance examination. For this four-year full-time program, students are required to study not only accounting subjects but also a number of courses in other disciplines (such as economics, management science, public finance, financing and banking, taxation, and business law). Students are assigned to work as accountants at medium or large-size enterprises or central government departments or other institutions after their graduation. They usually have a better chance to be promoted to senior positions in the accounting departments.

Graduate programs

Accounting graduate programs did not start in China until 1978, but they have developed rapidly since then.

Master's program. Students are required to study for two to three additional years after the undergraduate program. They study advanced courses in accounting and other disciplines, as well as complete a teaching assistantship assignment. They must prepare a thesis and pass an oral presentation at the end of the program. Those

who meet the requirements will receive the degree of Master of Economics (Accounting).³ There is another kind of one and a half to two-year program called “graduate class”. Students are allowed to prepare their thesis on their job and to apply for the master’s degree later on. The purpose of this “graduate class” program is to speed the training of higher-standard accounting scholars and practitioners badly needed in China.

Doctoral program. After several years of experimentation on the master’s program, a doctoral program for accounting was carefully initiated in 1982. Students who completed their master’s program can be selected as doctoral candidates for three more years of study. Besides a specific field study in accounting, doctoral candidates are required to study much additional academic literature and focus on research training. Finally, they must pass a fairly strict dissertation presentation before they can earn their Ph.D. in Economics (Accounting). The first Chinese accounting doctoral degree was granted in Xiamen University in 1985.

In China, accounting graduate programs have all been examined and approved by the Academy Commission of the State Council. Master’s programs are granted to certain qualified universities and research institutions, and doctoral programs are controlled by only a few distinguished accounting academics in the country. To date, one half of the Chinese universities with an accounting major have the master’s program, but the supervision right over doctoral candidates is still limited to 10 accounting professors in six universities with very strong accounting faculties. The number of accounting doctoral candidates in China is still quite small at present.

The Curriculum

Obviously the designing of a good curriculum plays a crucial role in any kind of education. Accounting education is no exception (Sundem *et al.* 1990). The accounting curriculum in China has gone through several revisions in the past 70 years.

A key feature of China’s accounting education is its emphasis on specialized-oriented training. As a result, the curriculum for accounting students concentrates on accounting alone. In particular, when the Soviet pattern was adopted in the early 1950s, accounting majors focused on four core courses: (1) Principles of Accounting; (2) Industrial Accounting – accounting procedures for state-run enterprises, including some basic cost accounting and the preparation or accounting statements following the uniform accounting system (UAS); (3) Financial Management for Industrial Enterprises – financial budgeting, planning and control of state funds, production costs and profits of state-run enterprises; and (4) Analysis of Economic Activities – how to analyze and evaluate the technical performance, operating achievement, and financial results of state-run enterprises.

Although a new core course system was adopted by the State Education Commission, based on the joint recommendations by prominent Chinese and foreign educators on a seminar on Curriculum Development in Business Education program held in Shanghai in the late 1980s, until today those four courses remain very influential

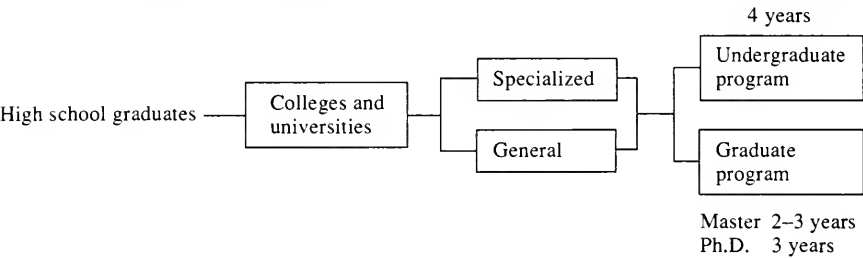
Table I. System structure of accounting education in China

II. Full-time (regular) schooling

A. Professional technician school – to train primary accounting clerks who will work in small enterprises, local governmental and institutional units:

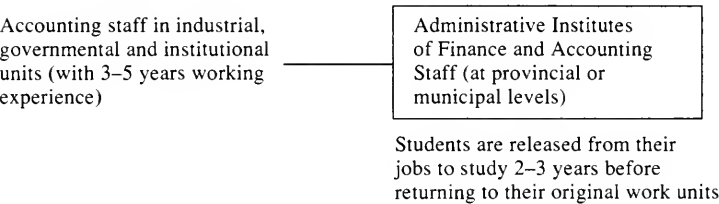


B. Higher education program – to train higher-standard accounting personnel and academics:

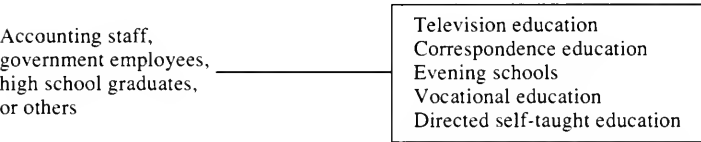


II. Professional training program

A. Full-time (training) schooling – to train accounting staff without formal accounting schooling or to update their professional knowledge:



B. Part-time schooling



in the accounting curriculum because of a general lack of texts and qualified faculty for some new recommended courses.⁴ In addition, students are required to study a set of specific accounting subjects dealing with rather detailed accounting procedures for various industries. It is very clear that an important determinant of the Chinese accounting educational program is, besides ideology and loyalty to the government's policies, to train students to be competent for daily accounting jobs immediately after their graduation

Following the new development of economic reform in the last decade there are significant changes in the accounting curriculum. For example, some courses focusing on Western accounting, auditing, and accounting for joint ventures with foreign investments and financial statement analysis were added, to meet the needs of

Table 2. Curriculum for accounting major (undergraduate)

Compulsory	Elective
Ideological Education	(a) <i>Restrictive</i>
Philosophy	Public Finance and Taxation ^a
Political Economics	Money and Banking ^a
Foreign Language	Statistics ^a
Mathematics	Enterprise Management ^a
Physical Exercises	Industrial Economic Law ^a
Principles of Accounting ^a	Planning and Administration of the National Economy
Enterprise Accounting (or financial Accounting) ^a	Management Economics
Management Accounting ^a	Principles of Computers
Financial Management and Analysis ^a	Accounting for Commercial and Trading Enterprises
Auditing ^a	Capital Construction Accounting
	Industrial Auditing
	Accounting for Joint Venture with Foreign Investments
	Government Accounting
	Accounting System Design
	(b) <i>“Nonrestrictive”</i>
	Western Financial Accounting
	Management Information Systems
	Western Auditing
	International Accounting
	History of Accounting
	Computer Application in Accounting
	Human Resource Management
	Organization Behavior
	Special Topics of Accounting
	Accounting for Small Enterprises
	Preparation of Thesis
	Auditing Systems and Standards
	Economic Effectiveness Audit
	Bank Accounting
	Economics in the West
	Value Engineering Analysis
	Chinese Language at College Level

Source: State Education Commission (China), *Specialty Outline for Higher Education Program*, 1987.
^aIndicates the new core courses that were suggested jointly by Chinese and foreign academics at a recent seminar and adopted by the Chinese State Education Commission.

expanding international economic exchanges and foreign investments. The scope of knowledge required for accounting students in China has been enlarged continuously. The current curriculum for the accounting major, as regulated by the State Education Commission (1987), is shown in Table 2. Courses listed on section I compulsory and II(a) are restrictive electives, while section II(b) lists nonrestrictive electives from which students can select eight more courses to complete their credit requirement.

Pedagogy

The common teaching method in China is “passive teaching”. Even at university level, each course is taught by an instructor in great detail using the designated

textbooks. Students rarely have discussion in class and instructors mainly rely on mid-term and final examinations to assess the students' achievement. For the undergraduate program, students concentrate on "common knowledge" subjects (courses such as Philosophy, Ideological Education, Political Economics, Mathematics, and Foreign Languages) and a few fundamental accounting courses during the first two years to build sound basis for further study. They take more technical accounting courses in the latter years of their university program. Usually, three months' field training is taken at the senior level. Students are grouped and assigned to be trainees in the accounting departments of selected enterprises or factories. They learn the actual performance of accounting jobs and how to apply the accounting knowledge they have learned in classrooms. Finally, students prepare a thesis related to their field training, which is a very important determinant of their academic achievement.

In recent years, some Western teaching methods are being tried. Case study methods, or "accounting laboratories", have been introduced experimentally in a few leading universities. i.e. a series of accounting transactions are compiled with blank uniform accounting documents and statements. This type of teaching method needs expansion into other universities.

The quality of teaching is usually determined by the competence of the faculty, which in turn hinges on the faculty members' schooling and communication skills. Since accounting graduate programs and the academic degree system did not exist until 1978, most accounting faculty nationwide received no schooling beyond a bachelor's degree. New faculty members were usually selected from senior students at the same university, but they were usually assigned as teaching assistants for three to four years before becoming lecturers. However, with the normalization of the higher education system, the knowledge requirement for the accounting faculty was raised gradually during the 1980s. Some graduates of the newly established master's and doctoral programs entered accounting faculty recently. In addition, there have been more training opportunities for faculty members, including study in other universities (domestic or abroad) as visiting scholars for one to two years to update their knowledge and improve their teaching ability.

As a way to improve teaching, some universities even started the evaluation of faculty performance. Usually, in each semester, one or two courses are selected to be evaluated through two parallel approaches: (1) student evaluation of instructors; and (2) colleague evaluation, both focusing on preparation of classes, comprehension of textbooks, communication skills, and interpretative ability. However, the effect of this evaluation program is hard to see at this early stage, especially as it lacks an incentive for improvement since the promotion is determined by seniority rather than performance.

Accounting Research

Another important aspect of accounting education is accounting research, which is a powerful source for the improvement of accounting practice, teaching, and learning. During the past decades, accounting research in China has also made some remarkable advances even though it progressed relatively slowly. As mentioned

before, the early accounting research mainly focused on introducing and translating Soviet accounting writings, textbooks, and accounting regulations. Only after the 1960s did research interests gradually turn to theoretical concepts of accounting. Under the socialist economic system, accounting in China today is regarded as a useful tool to implement the government's political, economic, and financial policies. Thus, the primary task of accounting research is legitimizing the socialist economic system through the use of accounting theory. Therefore, the basic function of Chinese accounting is: (1) to reflect each entity's operation and to provide information for centralized economic planning and control; and (2) to check all revenues and expenses in every entity to properly safeguard the state's interests. Correspondingly, the nature of accounting is defined as something that is intrinsically ideological. The related research results became a framework of Chinese accounting, which has been integrated into the accounting textbooks and curriculum, in order to teach students to fulfil the state's expectations of them as accountants.

Technically, most Chinese accounting research was limited to qualitative explanation. It concentrated on basic accounting concepts to derive some abstract generalizations. Most accounting researchers were trying to interpret and establish a socialist accounting framework with supporting explanation from Marxist classical works. Since accounting practice must strictly follow the guidance of the UAS, researchers rarely had the chance to deal with real problems in accounting practice. In other words, accounting researchers had to serve as a tool implement the UAS instead of examining the rationale of accounting practice. Therefore, for quite a long period, accounting research played a very limited role in improving accounting practice and education in China.

After 1978, Chinese accounting research began to change. It is evidenced as follows:

- (1) In light of economic reform, some new accounting issues are being discussed. For example, with the adoption of reform measures such as "fixed assets compensation fee system", "tax instead of profit", "business contracting", "joint ventures", and "share system", more research has extended to accounting issues concerning asset valuation and revaluation, income determination and the distribution of business profits and taxes (Lou and Enthoven, 1987). The discussions have advanced accounting practice, teaching, and learning in China.
- (2) With the progress of an externally oriented economy, research efforts also were devoted to incorporate the accounting techniques of the Western countries. As the new thinking of the nature of accounting – the "dual-nature view" – became popular,⁵ some techniques and theories of Western accounting, auditing, and international accounting are being gradually introduced and assimilated. These research efforts have enriched the accounting curriculum and produced a positive impact on the internationalization of Chinese accounting.
- (3) Studies on accounting principles and standards increased remarkably during the 1980s, and so did demands to reform the UAS to enable enterprise accounting to meet various information needs of the expanded users in the decentralized and diversified economic environment. A research project on developing Chinese accounting principles and standards was formally adopted by the Accounting

Society of China in the late 1980s which would influence the reform of accounting practice and accounting education in China in the future.

- (4) There are more studies of the accounting curriculum, textbooks, and teaching methods. The body of knowledge for accounting students has been re-examined so that some new subjects or courses have been added. Also, some innovative teaching approaches have been discussed and introduced experimentally.

Problems and Solutions

Evidently an integrated accounting education system has been established in China over the past half century. It has made great contributions to training accounting personnel and promoting the advances of accounting practice and economic management. However, accounting education is inevitably influenced by economic and cultural progress under a given social environment. Owing to current economic realities in China, accounting practice and education remain under-developed. Compared with the experience in other developed countries, there are some problems in Chinese accounting education that deserve attention:

- (1) It is unwise to over-emphasize specialist-oriented training objectives. Actually, there is too much concern with specific accounting techniques in the curriculum. Large numbers of accounting courses focus on detailed accounting procedures. This causes overlapping in accounting textbooks, which dampens students' enthusiasm. On the other hand, the knowledge requirement of the current curriculum is relatively narrow and it can handicap students' adaptability in real-world jobs. Thus, the curriculum for accounting majors should be oriented to: (a) teaching the general principles of accounting rather than the detailed procedures in specific industries; and (b) increasing the attention on related disciplines to expand students' knowledge.
- (2) Instructor-dominant teaching methods are ineffective and inefficient. Influenced by the traditional philosophy of "esteem for the master", Chinese students have to receive the instructors' detailed interpretation passively. Instructors dislike students raising questions in the classroom, which is in sharp contrast to the situation in Western countries. Obviously, passive teaching is harmful in the development of the students' capacity to analyze and solve actual problems. Clearly, not only should the instructors encourage students to raise and answer questions in the classroom, but also classroom discussions and case studies are absolutely necessary. The objective of teaching should be to teach accounting students how to learn, because accounting education is a life-long learning built on three components: skills, knowledge, and professional orientation (AECC, 1990).
- (3) There is a serious shortage of qualified accounting faculty. The ratio between students and teacher in accounting departments is greater than that in other academic areas to a considerable degree. On the one hand, very few accounting teachers have an education beyond a bachelor's degree; on the other hand, the present graduate students are unwilling to be academics because the income and

other benefits for teachers are much lower than for other occupations. To recruit faculty members directly from students graduating from the same university is also not conducive to original thinking and scholarship. To deal with this problem, more systematic training programs must be offered to current accounting faculty and the government should increase teachers' benefits to attract more high-quality graduate students to enter the faculty. Further, business accountants should be invited to teach at university on a part-time basis, thus lending a "real-world" touch to students' education.

- (4) There is a lack of objective and effective faculty performance evaluations. Certain evaluation measures have only been adopted artificially in a few universities and the measurement criterion is quite ambiguous. Therefore, an effort should be made to develop an evaluation system with its validity and reliability. The results of evaluation should feed back to the faculty promptly, with recommendations for improvement. In addition, the current reward and promotion systems for faculty should be redesigned. More weight should be given to current performance than seniority
- (5) There is a gap between Western accounting materials and the accounting reality in China. It is true that many Western accounting courses introduced into the Chinese accounting curriculum in the past decade have had a very positive impact on the expansion of students' knowledge and accounting practices in the new economic situation. But these courses, using the translations of Western accounting textbooks, are not easily understood by Chinese students. Since Chinese economic and business systems vary considerably from those of Western countries, simply teaching Western accounting is not desirable. It will be more productive if the basic principles of Western accounting are integrated with Chinese teaching materials. In other words, Western accounting courses should not be taught mechanically; they must be adapted in accordance with accounting reality in China.
- (6) Accounting research still lags behind the development of accounting practice, due to an over-enthusiasm for some pure theoretical concepts, which in turn is rooted in the view that accounting ought to be an ideological tool. This approach seems irrelevant and tedious in teaching and learning. Also, accounting research has been hindered through over-stressing the authoritativeness of the UAS, which prevents accounting researchers from examining its reasonableness. Actually, some regulations in the UAS conflicted with one another and they also produced a few misunderstandings in accounting teaching.

Therefore, it is an urgent task to improve accounting research in China. First, accounting researchers must be removed from the endless, controversial debates of the abstract concepts and shift their efforts to real-world issues in accounting practice and education. Both qualitative and quantitative analyses and empirical study must be enhanced. In particular, the current UAS should be re-examined thoroughly, in order to determine a rational relationship between the UAS and actual accounting practice, update the UAS to suit the changing environment.

A coherent new conceptual framework for Chinese accounting practice and the education program must be established. In the meantime, issues such as the objectives

(or role) of accounting the qualitative character of accounting information, the basic elements of accounting reports, and a set of fundamental accounting principles should attract immediate attention in order to build a scientific framework for accounting regulation, practice and education in China. Although the Chinese accounting profession has initiated a conceptual project of accounting standard-setting, sponsored by the Accounting Society of China the late 1980s, current progress is far behind the original plan.⁶

Conclusion

As the current economic reforms progress, the demand for competent accountants in China will keep growing. To satisfy this growing need for effective management, accounting education will play an even greater role. Fortunately, the problems mentioned above are beginning to gain more and more attention from accounting practitioners and educators in China. Efforts are being devoted to develop adequate solutions and some of them are already in use on trial base. If recent trends continue, Chinese accounting education will certainly develop towards its maturity and make a greater contribution to improving accounting practice and economic and business management in China.

Acknowledgements: The authors would like to thank Marc Mentzer for his helpful comments on an earlier draft.

Notes

- 1. For example, Dr. Pang Xurun, a Ph.D in Economics from the United States, founded the first accounting college in Shanghai in 1925; he is now respected as the "pioneer of accounting education" in China.
- 2. The "plus-minus bookkeeping" technique uses "plus" (increase) and "minus" (decrease) as the entry direction symbol. For assets, liabilities or owner's equity, all transactions are recorded according to their actual increase or decrease. For example, suppose an enterprise spent \$1000 to buy equipment and received \$500 raw materials from supplier A, the related entries would be recorded as follows:

(i) Plus (increase)	Equipment	1000	
Minus (decrease)	Cash		1000
(recording purchase of equipment)			
(ii) (a) Plus (increase)	Raw materials	500	
Plus (increase)	Account payable		500
(b) Minus (decrease)	Account payable	500	
Minus (decrease)	Cash		500
(recording purchase of raw materials)			
- 3. In China, an accounting master's or a doctoral degree is included in the academic subgroup of economics.
- 4. The new core courses for accounting program include five in accounting and another five in business areas. Since the uniform textbooks for new core courses remain in preparation at present, accounting programs in most Chinese universities, except for a few leading universities, are still dominated by the old core courses.
- 5. The so called "dual-nature view" describes accounting with two attributes: class and technical. Even if accounting should serve the specific interests of the ruling-class in varied social systems; most of its techniques are the legacy of human civilization and they should be applicable in all countries. It is very clear that this viewpoint emphasizes the similarity of accounting in different countries and encourages the study of Western accounting practices.

6. In 1989 the Accounting Society of China adopted a motion at its annual meeting that it would create a task force to study and issue a *Recommendation of Financial Accounting Standards for Business Enterprise* periodically. The first six conceptual projects were selected and suggested to be studied and issued in or after 1990. However, there is as yet no substantial progress on this research program. The political and economic situation after 1989 may be an explanation for the delay.

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Book Reviews

Accounting Theory and Development. by M.R. Mathews and M.H.B. Perera.
Thomson Australia & South Melbourne, 1991. 574 pp.

This textbook provides an overview of the development of accounting and accounting theory. It is aimed at "senior accounting students and newly qualifying accountants" in Australasia. The book considers a wide variety of topics. The authors opted for breadth rather than depth of coverage, though the depth of coverage is appropriate for the text's intended audience, i.e. senior undergraduate students. If it were to be used in a graduate level course, the instructor would want to supplement the chapters with additional readings. While it is primarily directed toward Australia and New Zealand, it also draws on the literature in other Anglo-American oriented accounting countries such as Canada, the United Kingdom, and the United States. Thus, the text is international comparative in its presentation, albeit with an Anglo-American bias. It would not be difficult to adapt the text for an accounting theory course in, say, the United States.

The authors never provide a complete statement of the purpose and objectives of their book, such as in a Preface. I, for one, would have appreciated knowing why they wrote the book, what they intended to accomplish with this text compared to other accounting theory texts, and what guided them in the topics chosen for inclusion. It is not a traditional accounting theory text, as will become apparent from the topical coverage discussed below. It considers financial reporting, broadly defined, and even with issues affecting the accounting profession. The issues in the chapters are mostly described, rather than critically assessed. I appreciated the fact that the authors avoided preachiness in their presentation, but I do think that they could have been more evaluative in the way they discussed the subjects. In one place, the authors state that they want to "enable the reader to understand the present and to appreciate likely future developments of the accounting discipline." They accomplish this objective, especially with the last section of the text.

The textbook contains 11 chapters, divided into five sections. Most of the chapters are less than 11 pages in length, and they are very readable. Each chapter has eight to ten essay questions, mostly designed to review and summarize the material in the chapter. Each chapter also has an extensive and up-to-date list of references and additional readings.

Section 1 presents the history of accounting. The first chapter is an overview of the book's contents, so the section actually begins with Chapter 2, covering the history of accounting to 1900. Ancient accounting and the emergence of double-entry bookkeeping are reviewed, as is the impact of the Industrial Revolution on accounting. Chapter 3 considers historical developments in the twentieth century in Anglo-American countries.

Section 2 is entitled "Accounting Theory" and has two chapters. Chapter 4 reviews the philosophy of science and has a brief introduction to the scientific method and naturalistic research methods. Chapter 5 is about theory construction and verification.

Section 3 has two chapters: Chapter 6 treats attempts to develop conceptual frameworks of accounting, and Chapter 7 discusses accounting standard setting. Both chapters focus on activities in the United States, the United Kingdom, Canada, Australia, and New Zealand. Chapter 6 compares and contrasts the conceptual framework efforts in these five countries as well as the one by the International Accounting Standards Committee. Chapter 7 first discusses the arguments for and against regulating accounting (i.e., having standards) and then describes the institutional arrangements for accounting standard setting in these same five countries. The issues discussed in Chapters 6 and 7 follow rather naturally from Chapter 5.

Section 4 considers "conventional" financial accounting issues. Chapters 8, 9, and 10 cover assets, liabilities, and income determination, respectively. Chapter 11 concerns accounting for price changes. As with previous chapters, these four chapters draw on the Anglo-American literature, though the approach to the topics is still rather traditional. The emphasis is on measurement issues and the variety of definitions given to these concepts. Chapter 12 is the last one in this section. It discusses disclosures and contains some very nontraditional topics. These include segmental reporting, employee reports, value added statements, and statements of future prospects. From an international perspective, these are leading-edge disclosure issues. The coverage is limited, but the reader can secure a deeper understanding from the reference list provided.

The book ends with the six chapters in Section 5, dealing with "emerging issues in financial accounting and reporting" — in other words, the "hot topics" of the day. In my opinion, Section 5 has the most interesting reading in the text. Chapter 13 is entitled "Creative Accounting." Though the authors note that creative accounting has its positive side (especially when no standards exist for accounting for new business transactions), the chapter mostly focuses on window dressing, fudging the books, and other manipulative accounting practices. I was disappointed in this chapter because of the clinical way that it covered the topic. I would have found it much more interesting (and students would, too) if it had been peppered with actual real-life examples of accounting deceptions. Chapter 14 considers insider trading, i.e. insiders using nonpublic information for their private benefit in dealing in company shares. The regulation of insider trading in the United States, United Kingdom, and Australia is covered, and a major part of the chapter is devoted to recent legislation in New Zealand. The chapter also discusses the empirical evidence on the profitability of insider trading as well as the practical problems of trying to control it. Professional ethics is the subject of Chapter 15. The development of and need for a code of ethics

in the accounting profession is presented. The chapter also explains the erosion of confidence in the accounting profession that has occurred in several Anglo-American countries as well as how the profession is attempting to buttress its credibility. Chapter 16 is called "Comparative Accounting" and is the traditional subject matter of international accounting textbooks. It includes discussions of the environmental influences on accounting, accounting classifications, basic features of accounting in France, Germany, and Japan (three non-Anglo-American accounting countries), and international harmonization. Chapter 17 explores the impact of culture on accounting and is based largely on Gray.¹ Chapter 18, the final one in the book, considers social accounting. Most of it is devoted to the philosophical basis (or rationale) for disclosing socially relevant information in accounting reports, rather than social reporting *per se*. In my opinion, it would have been a much better chapter if it had included examples of innovative social disclosures that companies are providing.

Overall, I think that this is a very good textbook. It covers a number of interesting and nontraditional topics for an accounting theory book. It basically provides an introduction to these topics. Readers must turn to the extensive reference lists provided for additional depth. However, it is designed for senior undergraduates and is appropriately developed for them. It is unlikely that all of the topics can be covered in one term, but there are certainly enough from which to choose. As noted earlier, while it is intended to be used in Australia and New Zealand, it could be adapted for use in the United States as well.

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Note

1. Sidney J. Gray, "Towards a Theory of Cultural Influence on the Development of Accounting Systems Internationally." *Abacus* 24, No. 1 (March 1988), 1–15.

Multinationals and Economic Development by *James C. W. Ahikpor*,
Routledge, London, 1990, 101 pp. £35.00.

The question may well be raised why international accountants should be interested in a publication dealing with multinational enterprises (MNEs) and the process of economic development? The answer is twofold:

- (1) the efficiency and effectiveness of MNEs are extensively impacted by sound financial and managerial accounting policies and methods;
- (2) economic development hinges on capital formation which itself is heavily influenced by confidence in both financial measurement and sound cost-benefit analysis (management accounting).

The study by Ahiakpor does not deal directly with accounting issues *per se*, but raises the question of the nature of the MNE, and explores whether MNEs have encouraged economic growth and development in developing economies. The author, a product of a developing country, reflects that for far too long students of economics – in both developing and developed countries – lacked real insight into the nature and extent of activities of MNEs. As he states, MNEs have been clouded by a Marxist perspective of distribution rather than of efficiency, effectiveness, and economy issues.

Many of the debates that occurred in the 1960s and 1970s (for example Baran in *Monopoly Capitalism* (1966) and Barnett and Muller in *Global Research: The Power of Multinational Enterprises* (1974)) focused on idealized ideas and commitments and not on logical pursuits including clear analyses of financial information and socio-economic impact measurements. The author suggests that a sound comprehensive appraisal and a balanced view of the role of MNEs has been warranted. He attempts to integrate both theoretical and empirical economic research in this regard.

A traditional notion that economic development in developing countries could only come from indigenous capital and from control by the state has not proven to be valid. Particularly during recent years, the role of the state has declined; privatization has become the trend; and MNEs have suddenly become popular as a vehicle to spur development. The old negative claims against MNEs have failed to be accepted. The author appraises these claims and examines the impact of MNEs on a developing country and international economic development. He reaches the conclusion that MNEs play a far more positive role in, and effectively contribute to, economic development than is often envisaged. It is important to know, according to the author, that MNEs earn normal rates of return and do not make excessive profits on their operations in developing countries.

Most of the short chapters (seven in total) in this book discuss the nature and structure of the MNE (Chapters 2 and 3), the technology used by MNEs (Chapter 4), and exports and imports of MNEs (Chapter 5), all against the background of economic theories for economic development. Chapter 6 considers the role of MNEs in resource literature, and here information measurement (accounting) issues are discussed. Measuring efficiency in terms of the total amount of profits, foreign firms (MNEs) appear on the average to be the most efficient employers of capital. Foreign firms also tend to derive much higher productivity from labor, as a basis for capital formation, than domestic firms.

The author suggests that most governments of developing countries now recognise the positive role MNEs can play in their economic development, including the extensive exports (foreign currency earnings) they can create. There tends to be an efficiency advantage of foreign firms over local counterparts, although the author states that more evidence is needed. Here accountants could play an effective measurement role in deriving such quantitative information.

What is the particular value of this study for accountants in the international arena? First, it sets forth the different theories and notions that have been considered as to the impact of the MNEs on developing economies. Second, it attempts to give a balanced view of the significance of the MNE in development. Third, it conveys to us that more refined (accounting) measurements and relevant financial information will

be needed to evaluate the impact of MNEs *vis à vis* domestic firms and the contribution MNEs can make towards economic growth and development.

This book will be of particular value for accountants concerned with multinationals in developing economies.

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1991 International Tax Summaries: A Guide for Planning and Decisions, edited by David T. Wright. Coopers & Lybrand International Tax Network, John Wiley & Sons, Inc., 1991, 1182 pp, \$95.00.

1991 International Tax Summaries provides a brief synopsis of the principal attributes of the tax systems of 105 countries. Summaries were included only for countries in which Coopers & Lybrand has practice offices or correspondent firms. The data were furnished for each country by a member of the Coopers & Lybrand International Tax Network located in that country and were updated as of July 31, 1991.

This book was written to provide guidance for individuals or businesses interested in investing or working in foreign countries. Although the tax summaries are not comprehensive, they do provide a useful overview of the corporate, individual, and nonresident income taxes levied in each country and convey some idea of the complexity of the country's tax system. Information about other important investment decision factors, such as exchange controls, investment restrictions, and investment incentives, is also provided which communicates a sense of the country's business climate. The book was written for readers with some background in business and omits most technical tax jargon.

The countries included in the book are presented alphabetically and analyzed separately. No comparisons between countries are made. Although as many as 37 tax and business provisions are reviewed, not every provision applies to or is presented for each country. The summaries are organized into seven categories: corporate income taxes, individual income taxes, nonresident income taxes, other significant taxes, specific items included in computing taxable income, related business considerations, and guidance on selecting a business form by nonresidents.

The section on corporate income taxes includes a brief discussion of tax rates, local income taxes, the tax treatment of capital gains and losses, and branch profits taxation. Methods of foreign tax relief such as tax credits for foreign taxes paid and tax treaties are also reviewed. The types of corporations that can be organized in the country are defined, such as limited liability companies or joint stock companies, and

the effect of the form on the tax liability is explained. Information concerning procedural matters, such as due dates, estimated tax payments, and penalties, is also provided.

The section on individual income taxes presents the tax treatment of citizens and residents of the country. The same topics that are covered for corporations are discussed for individuals. The summary of nonresident taxation clarifies when individuals or corporations are classified as residents or nonresidents, outlines the rates imposed on nonresidents, and discusses the withholding taxes imposed on various classes of income. Information about tax treaties and special tax rules that apply only to nonresidents is also presented.

The section on other significant taxes briefly outlines the kinds of activities on which sales or value added taxes are imposed, and lists the rates. It also reviews gift and inheritance taxes, payroll taxes, and taxes on natural resources, and summarizes other taxes distinct to the country, such as banking activities taxes or stamp duties.

The material covered in the first four categories is not detailed and is intended to convey only a general understanding of each country's tax system. The section on calculating taxable income provides slightly more specific information about the kinds of gross income, deductions, and losses included in the computation. The emphasis in this section is on calculating *corporate* taxable income, not individual taxable income.

Information about incentives and grants for exporting or investing in certain industries, import permits, free trade zones, exchange controls, and investment restrictions imposed on nonresidents is discussed briefly in a section on nontax business considerations. Tips on the best approach for investing are included in a section concerning a nonresident's selection of a business entity. If nonresidents are permitted to operate under more than one form, the differences in tax treatment are compared and other factors that must be considered are noted. Specimen tax computations are also included for 47 countries. The examples illustrate the corporate tax provisions outlined in the summaries, not the individual tax provisions.

One of the stated goals of *1991 International Tax Summaries* is to assist in the comparison of the tax systems of different countries. The tables of withholding rates on dividends and interest included inside the front and back covers of the book are handy for making comparisons between countries. Unfortunately, the summaries presented in the book appear to be incomplete for many countries which hinders making comparisons. The 37 provisions discussed earlier are numbered. In some cases, if a provision does not apply, the provision number is listed and a short statement that the provision is not effective or the word "none" is noted. In other cases, the item is ignored which leaves the reader wondering if the provision applies or if the information simply was not provided.

There is also a lack of uniformity in the amount of information presented for each country. Although the summaries are not intended to be comprehensive, the provisions of some countries are explained in only one sentence, while for others the provisions are described more thoroughly. The section on selecting business entities is particularly disappointing since no guidance is presented at all for 26 countries. One would expect that in a book subtitled *A Guide for Planning and Decisions* this information would be supplied for all countries in which nonresidents are permitted to invest.

In summary, even with the weaknesses noted, *1991 International Tax Summaries* is a very readable reference book which provides a useful overview of the tax complexities and business climates of the countries surveyed. The book would also be an excellent supplement in an international accounting or international tax course.

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The American Influence in Accounting: Myth or Reality? The Statement of Cash Flows Example

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Key words: Statement of cash flows; Cash flow statement; Statement of changes in financial position; Financial institutions; Operating activities; Investing activities; Financial activities

Abstract: *As for Canada and America, a number of other countries have introduced a new model of statement of cash flows. To what extent are the standards and drafts which have been, or will be adopted in these countries influenced by their North American counterparts? What preparatory phases were necessary to develop them? What local specificities have been taken into account? These questions are not uncontroversial. In France, for example, the national recommendation is presented by some as a simple translation of the American standard rather than the product of a development process which was appropriate to the specific characteristics of French accounting. A comparative survey has been carried out to answer the questions. Apart from an obvious similarity of purpose, there are several differences which concern the scope of the application, objectives, concept of cash, calculation of cash flows from operating activities, classification of operations and the related disclosures required.*

Introduction

Historically, Canada, the United States, and New Zealand were the first countries to require the inclusion of a statement of cash flows in the financial statements (1985, 1987, and 1987 respectively). Since then, some other countries have required a similar statement. In particular, in October 1988, the French Institute of Certified Public Accountants (Ordre des Experts Comptables et des Comptables Agréés – OECCA) approved a new Standard (Recommendation No. 1.22) recommending that

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*The author wrote this article when he was on sabbatical leave at Ernst & Young Paris (1991).

a Statement of Cash Flows should be included in year-end financial statements in place of the existing Statement of Changes in Financial Position.¹

To what extent are the standards and drafts which have been or will be adopted in these countries influenced by their North American counterparts? What preparatory phases were necessary to develop them? What local specifications have been taken into account? These questions are not uncontroversial. In France, for example, the OECCA recommendation is presented by some as a simple translation of the American "Statement of Cash Flows" standard² rather than the product of a development process which was appropriate to the specific characteristics of French accounting.

Whether this is true or not, a serious comparative survey was necessary to answer the questions. After examining the state of standardization in cash flow statements in 19 different countries (see Appendix 1), we finally limited the scope of our survey to the following countries: Australia, Canada, the United States, France, New Zealand, South Africa, the United Kingdom and Ireland, plus the International Accounting Standards Committee (IASC).

The summarized results of the comparative survey of the texts published in these countries are given in the schedules in Appendix 2.

Apart from an obvious similarity of purpose, there are several differences in the various national statements. The aim of this article is to highlight these differences, which concern the scope of the application (section 1), objectives (section 2), concept of cash (section 3), calculation of cash flows from operating activities (section 4), classification of operations (section 5) and the required related disclosures (section 6).

1. Differences in the Scope of Application

In most of the countries included in the study, the publication of a statement of cash flows is compulsory, but certain categories of enterprise are exempt (1.1). France alone has issued a more limited statement of application, which is in fact only a recommendation (1.2). Financial institutions are subject to special treatment (1.3).

1.1. The Principle: Application to All Entities

This is the principle followed in the following countries: the United States, Canada, New Zealand, South Africa, the United Kingdom and Ireland, Australia (and the IASC). However, the standards or drafts in some countries provide for the exemption for certain entities due to the nature of their activities (as in the United States), because they belong to a group (as in New Zealand, the United Kingdom and Ireland, as well as in Australia), or as a result of their size (in the United Kingdom and Ireland).

1.1.1. Exemptions Related to the Nature of the Activity

In the *United States*, SFAS 95, with its supplement SFAS 102 ("Statement of Cash Flows – Exemption of Certain Enterprises and Classification of Cash Flows from

Certain Securities Acquired for Resale”) is a compulsory standard for all companies, except the following:

- (1) defined benefit pension plans;
- (2) highly liquid investment companies which meet the following conditions:
 - (a) the majority of investments must be highly liquid;
 - (b) investments must be recorded at market value;
 - (c) debts contracted during the fiscal period must not be material in relation to the assets managed during the same period;
 - (d) a statement of changes in net assets must be established.

1.1.2. Exemptions Related to Group Membership

The *New Zealand SSAP-10* does not apply to subsidiaries held 100 percent by a group which publishes its accounts in New Zealand. Similarly, the Australian exposure draft excludes subsidiaries of companies incorporated in Australia from its scope of application.

In the *United Kingdom and Ireland*, this exemption is restricted: the FRS No. 1 does not apply to entities that are wholly owned subsidiaries of a parent company which is established under the law of a member State of the European Community, provided that: the parent company publishes, in English, consolidated financial statements which include the subsidiary concerned; those consolidated financial statements include a consolidated cash flow statement reporting the cash flows of the group; and cash flow statement gives sufficient information to enable a user of the financial statements to derive the totals of the amounts required to be shown under each of the standard headings stated in the FRS.

1.1.3. Exemptions Related to Size

The *United Kingdom and Ireland* require the same publication of all entities which establish financial statements intended to give a true and fair view of the financial position and profit or loss. However, the FRS 1 provides for an exemption for companies incorporated under the Companies Act that are entitled to the exemptions available in Sections 246–249 of the Companies Act 1985³ for small companies.⁴

The positions taken by the United States, Canada, South Africa, New Zealand, the United Kingdom and Ireland and Australia are confirmed by ED 36 of the *IASC* which applies to all entities, including financial institutions.

1.2. France: The Exception

The rules applicable to the establishment and publication of this statement of cash flows in France are derived from various sources:

- (a) Under the *law of April 30, 1983*, applying the 4th EEC directive, annual financial statements do not include the statement of cash flows, which is therefore a non-compulsory document (art. 8, para. 3 of the French Commercial Code). Provision is nevertheless made for the establishment and publication of the statement of

cash flows in the “elaborated system” for presentation of the financial statements, but as this system is optional the obligation is small. The statement of cash flows is not considered as part of the normal consolidated financial statements.

- (b) In contrast, *the law of March 1, 1984*, which concerns the prevention and amicable settlement of financial difficulties, includes the statement of cash flows in its list of obligatory documents to be provided by corporations and certain other entities when certain limits, fixed by decree, are exceeded (entities with 300 or more employees, entities with annual sales or resources of 100 million francs or more). However, this obligation does not go so far as publication, since the law allows restricted circulation of the document; indeed, it is only submitted to the statutory auditors, the works committee, and the executive board (*conseil de surveillance*) where applicable.
- (c) As early as 1971, the *Commission des opérations de bourse* (equivalent to the Securities and Exchange Commission) encouraged inclusion of the statement of cash flows in the annual report published by listed entities (and a consolidated statement of cash flows for companies issuing consolidated financial statements).
- (d) *OECCA recommendation no. 1.22* states that the purpose of the statement of cash flows is to supplement the financial information provided in the annual or consolidated financial statements and recommends that enterprises should publish such a statement with consolidated and corporate financial statements. The basic position therefore is that the document is not obligatory, but that it is recommended to provide it along with both consolidated and corporate financial statements.

1.3. Financial Institutions

With the exception of France, which does not include financial institutions and insurance companies in the scope of the application of its recommendation, the standards of the countries examined apply either explicitly (*United States, United Kingdom and Ireland, IASC, Australia*) or implicitly (*Canada*⁵, *New Zealand, South Africa*) to financial institutions. However, differing amounts of detail are given regarding the methods of application of the standards to this specific sector of activity.

The United States, in SFAS 95, developed in SFAS 102 and 104, the IASC, and the Australian exposure draft have adopted specific clauses applicable to this type of activity, covering: trading operations – these shall be classified as operating cash flows and the presentation of cash flows of certain operations – investments with financial bodies, term deposits made by clients and loans granted to clients; for these operations, the standards provide for net reporting of receipts and payments in order to present a net cash flow.

The New Zealand standard does not provide any specific details of its application to financial institutions in its main text. It does, however, provide an example of a cash flow statement for a company with interests in financial services. In this example, in contrast to the positions taken by the US, UK, Australian and IASC standards, cash flows from financing services are not treated or presented differently.

The schedule shown in Table 1 summarizes the differences in the scope of application between the countries.

Table 1.

	Application of principle to all entities	Exemption: nature of activity	Exemption: membership of a group	Exemption: size of company	Financial institutions
USA	Y	Y			Y/E
France	N				N
Canada	Y				Y/I
New Zealand	Y		Y		Y/I
South Africa	Y				Y/I
IASC	Y				Y/E
UK/Ireland	Y		Y	Y	Y/E
Australia	Y		Y		Y/E

Y: yes; N: no; E: expressly; I: implicitly.

2. Differences of Objectives

One of the objectives of a cash flow statement is, by definition, to provide information on the nature and volume of transactions which affect the cash position. This objective is present in all the standards studied, but to different extents. For some countries, it is the main objective (2.1). For others, it is only a secondary objective – part of a broader concept of the statement of cash flows (2.2). Finally, some countries add to this objective a detailed definition of the assistance the information contained in the statement should provide for investors (2.3).

2.1. The Main Objective: Relevant Information on Receipts and Payments

This objective, formulated in various ways, is at the heart of the standards in the following countries:

USA: to provide relevant information of the cash receipts and cash payments of an enterprise during a given period.

France: to explain changes in cash in the same way as the statement of income explains the components that comprise the net income.

New Zealand: to provide information of the operating, financing, and investing activities of an entity and the effects of those activities on cash resources.⁶

United Kingdom and Ireland: to report on a standard basis the cash generation and cash absorption for a period.

Australia: to provide relevant information to users of the cash inflows and cash outflows of an entity during a reporting period.

IASC: to provide information of the historical changes in cash and cash equivalents.

2.2. A Broader View of Cash Flow Statements

Canada has a broader objective since the purpose of the cash flow statement is considered to be not only the presentation of the effect of the enterprise’s activity on

cash but more generally the provision of information of the operating, financing and investing activities of an enterprise. Similarly, *South African Statement AC 118* records the objective of a statement of cash flow information as being “to provide users of financial statements with information concerning the source and use of all financial resources during the period.”

This objective has a wider scope than that of SFAS 95 (see above). As G.K. Everingham and B.D. Hopkins note,⁷ statement AC 118 has not confined itself to cash transactions only. The implications of this difference from SFAS 95 are more fully discussed in section 5.2.1 (non-cash investing and financing transactions).

2.3. Help to Investors

SFAS 95 states that the information contained in the statement of cash flows, if used with related disclosures and information in other financial statements, should help investors, creditors and others to assess the following: (a) the enterprise’s ability to generate positive future net cash flows; (b) the enterprise’s ability to meet its obligations, its ability to pay dividends, and its needs for external financing; (c) the reasons for differences between net income and associated cash receipts and payments; and (d) the effects on an enterprise’s financial position of both its cash and non-cash investing and financing transactions during the period.

Canada and Australia (a and b), *New Zealand* (a, b and c), the *United Kingdom and Ireland* (a and b) and the *IASC* (a and b) all state similar objectives. *South Africa* does not mention any objectives related to user needs.

Items (a) and (b) above clearly demonstrate the aim of SFAS 95 to respond to the needs of financial analysts, investors and creditors. The approach is consequently greatly influenced by the practices of American financial analysts.

The *French* recommendation is less precise in this respect and simply stresses that the statement of cash flows is a useful business management document that provides important information for interested parties. Although the recommendation contains certain concepts developed by French economists (such as the concept of Gross Cash Surplus from Operations less changes in inventory, and a presentation of operational flows), it is still strongly influenced by the options selected by the Americans.

Objective (c) above must be considered in relation to the calculation of the net cash flow from operations (see section 4 above). The impact of objective (d) is examined below (see section 5.2.1, non-cash investing and financing transactions). The schedule shown in Table 2 summarizes the objectives stated by the standards.

3. Differences in the Concept of Cash

Except for *France*,⁸ all countries refer implicitly (*New Zealand* and *Australia*) or explicitly (other countries) to the concept of “cash and cash equivalents.” There is a fairly general consensus on the classification of assets to be included in this concept (3.1). However, the treatment of bank overdrafts is far from standardized (3.2) and there are variations in the supplemental disclosures required (3.3).

Table 2.

	Cash flow	Broader objective	Help for investors			
			Generate positive cash flow	Meet obligations	Difference between net income and cash flows	Cash and non-cash investing and financing transactions
USA	x		x	x	x	x
France	x					
Canada		x	x	x		
New Zealand	x		x	x	x	
South Africa		x				
IASC	x		x	x		
UK/Ireland			x	x		
Australia	x		x	x		

3.1. Cash and Cash Equivalents

In the United States, cash and cash equivalents include the following items: currency on hand and demand deposits with banks or other financial institutions, and short-term investments which are highly liquid and readily convertible to known amounts of cash. Generally, to qualify as cash and cash equivalents, investments must be for an original maturity of not more than three months. Nevertheless, enterprises still have a certain degree of freedom in the definition of “cash equivalents”, which can be adapted to the specific characteristics of their business activities. Details of their individual policies must be provided in the notes to the financial statements.

For *Canada*, *New Zealand*, the *IASC*, the *United Kingdom* and *Ireland*, as well as *Australia*, the definitions are similar. The *South African* statement, although referring to cash and cash equivalents, fails to provide any guidance concerning the term “cash equivalents.” In the *French* recommendation, cash and cash equivalents are assets which are readily convertible (cash on hand, marketable and short-term investment securities and demand deposits).

3.2. Treatment of Bank Overdrafts

The treatment of bank overdrafts is a debatable matter. C. Wayne Alderman and Donald H. Minyard⁹ explain the difficulty by the following question: since overdrafts will be deducted from cash fairly soon, should they be netted back against the cash balance in other accounts in the cash flow statement, which could mean reporting a negative cash balance?

The answer differs from country to country. The *USA* considers bank overdrafts as an integral part of financing activities. On the other hand, *France*, *Canada*, *New Zealand*, the *United Kingdom* and *Ireland*, and *Australia* include them in cash. In *New Zealand*, for example, cash includes liabilities, which are the opposite or negative form of the deposits and highly liquid investments, such as borrowings at call. But cash does not include borrowings subject to a term facility.

The *IASC* takes a more open position. According to exposure draft 36, bank overdrafts can be considered as financing activities, or components of cash and cash equivalents. *South Africa* does not give any instructions on this point.

The inclusion of bank overdrafts in cash equivalents is not without its critics. As noted in France by Michel Ternisien,¹⁰ the separation of short-term credits and other debts makes it impossible to explain the total change in debt and to measure the leverage on the debt accurately. The guide for the application of the standard provides for possible readjustment so that current accounts with banks are reflected in the financing function.¹¹ For C. Wayne Alderman and Donald H. Minyard,¹² the netting of bank overdrafts would produce a cash balance in the statement different from that reported on the balance sheet. Repayment of an overdraft is, according to these authors, either a financing outflow or a reduction of accounts payable.

3.3. Supplemental disclosures

In most countries (except South Africa), a disclosure on the calculation of the changes in cash based on balance sheet items is required (see Appendix 2). In France, this information appears all the more necessary because the concept of cash underlying the recommendation is significantly different from the definition given in the French Accounting Plan, particularly in its inclusion of secured bonds, discounted notes that have not yet matured and assigned receivables, and current accounts which are readily convertible or can be withdrawn at any time.

This also means that short-term credits can be reclassified as belonging to financing activities for analysis purposes if necessary. The schedule shown in Table 3 presents concept of cash in the various countries studied.

Table 3.

	Cash and cash equivalents	Cash	Difference between assets and liabilities	Treatment of bank overdrafts
USA	x			FIN
France			x	CASH
Canada	x			CASH
New Zealand		x		CASH
South Africa	x			?
IASC	x			FIN/CASH
UK/Ireland	x			CASH
Australia		x		CASH

FIN = Financing activities

4. Differences in Calculating Cash Flows from Operating Activities

One method of reporting cash flows from operating activities is the direct method, which discloses major classes of gross cash receipts and gross cash payments. Another method is the indirect method, which discloses the net cash flow from operating activities by adding back and in some cases subtracting non-cash items included in the determination of net income to this net income. All the countries included in the

study refer to at least one of the two methods (4.1). France, in addition, has some specific characteristics on this point which should be noted (4.2).

4.1. The Choice of the Direct or Indirect Method

The countries examined have made different choices concerning the method to be used, as in the schedule shown in Table 4.

Table 4.

USA/IASC UK/Ireland	New Zealand/ Australia	South Africa	Canada	France
Direct method recommended	Direct method recommended	Combination of direct and indirect methods	Both methods authorized	Two indirect methods
Indirect method authorized	Reconciliation with net income possible in notes			

The United States, the United Kingdom and Ireland, and the IASC strongly encourage enterprises to calculate the net cash flow from operating activities by the direct method. However, as stated in ED 36 of the IASC, many enterprises may not be able to report gross operating cash flows without incurring substantial costs that may outweigh the benefits of the information to external users. This is why SFAS 95, FRS 1 and ED 36 allow the indirect method to be used.¹³ In *New Zealand* and *Australia*, cash flows from operating activities may only be presented using the direct method. Exposure draft 39 (*New Zealand*) had proposed the indirect method as an alternative, but this proposal was not adopted in the final standard despite considerable criticism. To increase flexibility, SSAP-10 does not prohibit the disclosure of cash flows calculated by the indirect method in a separate reconciliation accompanying the statement.

The *South African* position is unusual: the standard recommends presentation by the indirect method for cash flows from operations as defined in the strictest sense, that is, excluding interest paid and received and taxes. Cash inflows and outflows related to interest income and expenses and taxes are then presented separately as in the direct method to obtain the net cash flow from operations. This is, therefore, a kind of combination of both methods. *Canada* has opted for very open solutions, leaving enterprises the free choice between the two methods. In *France*, two indirect methods are recommended (see section 4.2). The countries which recommend (or authorize) the direct method for cash flows from operations and have defined the objective of the statement of cash flows, particularly by recognizing that it should help investors to assess the reasons for differences between the net income and the associated cash movements (see section 2.3) require (like the United States and the United Kingdom/Ireland) or allow (as do New Zealand, the IASC, and Australia) a reconciliation of the net income and the net cash flow from operations to be given in the notes to the statement.

Canada does not require such a reconciliation, as they do not state the above mentioned objective.

4.2. The French Recommendation: Specificities

There is an important difference of terminology and methodology between France and the other countries. The French cash flow statement is based on the principle that the net cash flow from operations is calculated using one of two indirect methods, either based on the net income or on the Gross Operating Cash Surplus (*Excédent Brut d'Exploitation*) excluding changes in inventory. Table 5 summarizes these differences.

Table 5.

USA, Canada, New Zealand, South Africa IASC, UK/Ireland, Australia	France
Direct method: cash receipts less cash payments	
Indirect method: based on the net income ("addition" method)	Indirect method, option 1: based on the net income ("addition" method)
	Indirect method, option 2: based on the Gross Cash Surplus from Operations excluding changes in inventory ("subtraction" method, sometimes called the direct method in French practice)

The second option possible under the French recommendation has certain advantages in economic terms since the Gross Cash Surplus from Operations excluding changes in inventory is a neutral value for accounting conventions related to inventories, used as a basis for other statements of flows (it is the same as the ESO – *Excédent sur Opérations* – or Surplus from Operations used in G. de Murard’s Multi-year Table of Financial Flows). A presentation on this basis allows the user to assess the changes in net cash flow from operations by analyzing cost management and operating cycle management at the same time.

5. Differences in Classification of Operations

Most items fall clearly into one of three divisions: operating, investing, and financing activities. Some are nevertheless debatable. Most countries give clear instructions favoring a particular solution. The *IASC* and *Canada* leave the choice to the reporting body in many circumstances.

5.1. Operating Activities

The “operating activities” function is fairly similar in the US, French, South African and UK/Irish standards as it results from the same line of reasoning in accounting terms, namely that the cash flows from operations must reflect the cash effect of transactions and other events that enter into the determination of net income.¹⁴ Operating activities are, in these cases, defined as all transactions that are not part of

investing activities or financing activities and include a wide variety of cash flows: cash flows from operating activities in the strictest sense, cash flows generated by financing and cash management activities (such as interest revenues and charges), and cash flows concerning such things as taxes and employee profit sharing.¹⁵

New Zealand uses a stricter definition of operating activities, which excludes interest revenues and charges. The *Australian* position is somewhere between the two, with interest charges excluded from operating activities. The Canadian Institute of Chartered Accountants (CICA) leaves a good deal of discretion to companies for the classification of cash flows as operating, investing or financing activities. Clearly, the CICA prefers to allow the use of judgment rather than prescribe rules, thus allowing a certain flexibility so that users receive a statement which is meaningful and suited to their needs. These differences in concept are reflected in differing treatments of interest, dividends and taxes. The schedule shown in Table 6 summarizes the respective positions.

There are also differences between standards concerning the nature of information which must be provided on the contents of the operating activities, that is, information relating to interest paid, as well as taxes paid.

Table 6.

	Interest paid	Dividends paid	Interest received	Dividends received	Taxes paid
USA	OPE	FIN	OPE	OPE	OPE
France	OPE	FIN	OPE	OPE	OPE
Canada		OPE/FIN			
New Zealand	FIN	FIN	INV	INV	OPE
South Africa	OPE	OPE	OPE	OPE	OPE
IASC	OPE/FIN	OPE/FIN	OPE/INV	OPE/INV	OPE
UK/Ireland	RETURNS ¹⁶	RETURNS	RETURNS	RETURNS	TAXATION
Australia	FIN	FIN	OPE	OPE	OPE

OPE = operating activities; INV = investing activities; FIN = financing activities; RETURNS = returns on investments and servicing of finance.

5.1.1. Information Related to Interest Paid

(a) *Need for Information.* In terms of logic, the inclusion of interest paid by an enterprise in the category of operating activities is highly debatable, as interest remunerates the creditors in the same way as dividends remunerate investors. Such interest should therefore logically be considered as financing activities.¹⁷ In terms of economic and financial analysis, it is notable that the inclusion of interest expenses in the cash flow from operating activities results in the latter being dependent on the enterprise's financial policy, which means it is of no use in the assessment of the enterprise's economic performance. Furthermore, due to the separation of the interest paid and the changes in borrowed capital, it is not possible to estimate the balance of the enterprise's transactions with banks and credit institutions. The classification of interest paid in operating activities is the subject of criticism by economists and financial analysts for this very reason. Therefore, regardless of the activity in which they are included, specific information should be given in relation to interest payments

to allow users of financial statements to make any reclassifications they judge useful and to assess the effect of the company's financial policy.

(b) *Position of the Countries Included in the Survey.* Certain countries require this information to be disclosed either in the main body of the statement (*Australia*, the *United Kingdom* and *Ireland*, *South Africa*, *New Zealand*, the *United States*, in the case of the last two only when the net cash flow from operations is presented by the direct method), or in the notes (the *United States* – when net cash flow from operations is calculated by the indirect method). The *IASC*'s position on this matter is the same as that of the *USA*. In contrast, this information is not required by the *French* and *Canadian* standards and exposure drafts.

5.1.2. Information Related to Taxes Paid

(a) *Need for Information.* Most countries classify taxes in operating activities. The *United Kingdom/Ireland* standard creates a separate heading: "taxation." Canada is the only country of those studied not to give an opinion on this point. Depending on what type of financial analysis framework is being used, the classification of tax has been approached in many different ways. For this reason, specific information should be given concerning taxes paid, in the same way as for interest paid.

(b) *Positions of the Countries Included in the Survey.* The positions concerning the information to be disclosed are exactly the same as for interest paid (see above).

5.2. Financing and Investing Activities

In addition to the differing treatments of interest and taxes paid and received as analyzed above, which influence the contents of the financing and investing activities sections, there are other divergences between recommended national practices. Some are major and concern the presentation of cash and non-cash flows; others are minor and concern specific points to do with classification.

5.2.1 Non-cash Investing and Financing Transactions

The schedule shown in Table 7 presents the treatment of non-cash investing and financing transactions in each of the countries covered. Each country's position is in harmony with the objectives assigned to the statement of cash flows by the relevant standard or exposure draft.

As seen above (2.2), for *Canada* and *South Africa*, the major objective of the statement is to provide information of the activities of an enterprise (*Canada*) or to provide information concerning the source and use of all financial resources (*South Africa*). As a result, both cash and *non-cash* flows are included in the cash flow statement. For the *United States*, *New Zealand*, *France*, the *IASC*, the *United Kingdom* and *Ireland* and *Australia*, the main objective of the statement of cash flows is to provide information of the items affecting the cash position of an enterprise (see section 2.1). Consequently, non-cash transactions are not reflected in the body of the statement.

Table 7.

	Not reported disclosure required	Not reported disclosure required	Reported
USA	x		
France		x	
Canada			x
New Zealand		x	
South Africa			x
IASC	x		
UK/Ireland	x		
Australia	x		

Of the above countries, the United States and the IASC also recognize that the cash flow statement should help investors to assess the impact of a company’s cash and non-cash investing and financing transactions on its financial structure (see section 2.3). As a result, the American and IASC standards require disclosure of non-cash financing and investing transactions. New Zealand and France, which do not mention this secondary objective, do not require any supplemental information to be disclosed. The position of the United Kingdom and Ireland is rather paradoxical. Although the secondary objective is not stated, disclosure is nevertheless required in the appendix.

5.2.2. Other Differences of Classification

These differences concern the following items:

Treatment of dividends received from companies accounted for by the equity method: the approach is consistent with the concept of the operating activity in all the countries studied: when this concept is restricted, dividends are included in investing activities (as in *New Zealand*), and when it is broadly conceived, they are included in operating activities. *France* is the only exception to this rule. It includes dividends in investing activities despite its broad definition of operating activities. There is no apparent logical reason why dividends received from companies accounted for by the equity method should be treated differently from other dividends.

Treatment of lease instalments: this question is only raised in the American and French standards. Under the American standard, the portion of lease instalments paid during a year which corresponds to the principal is treated as a financing activity cash flow while the portion which corresponds to interest is considered as a cash flow from operating activities. In the French statement of cash flow, the treatment of interest payments is the same, but the repayment of the principal is considered to be part of financing activities. This leads to the repayment of the debt shown on the balance sheet being considered as an investment, which appears arguable to say the least.

Investment subsidies: none of the countries studied defines the treatment of investment subsidies, which the French recommendation, with some originality, includes in investing activities.

5.3. Classification of Hedging Operations

Most of the standards do not give any guidance on the classification of hedging transactions except for the *Americans*, who have specific instructions on this point in SFAS 104, the *UK/Ireland* standard, the *Australian* exposure draft and *IASC* exposure draft 36.

SFAS 95 provides for classification by type of hedging instrument. SFAS 104 allows American enterprises to classify cash flows from hedging transactions, such as futures contracts, forward contracts and option contracts, in the same activity as cash flows from the items being hedged provided the policy is described in the disclosures. According to Thomas Klammer and Sarah Reed,¹⁸ this may represent the first step back to classification by purpose rather than individual activity. This solution is adopted in *UK/Ireland* and *Australia* and confirmed by *IASC* ED 36, which states that if a contract is accounted for as a hedge of an identifiable position, the cash flows associated with the contract are classified in the same manner as the cash flows of the position being hedged.

6. Differences in Related Disclosures

Most of the differences concerning the disclosures required for the various statements of cash flows have been discussed above.¹⁹ However, the following requirements are also applicable:

- (1) Information by analysis of the impact on cash of exchange rate fluctuations is required by the French statement, but not by others. In our opinion, this information should show the impact of exchange rate fluctuations by each activity, that is, impact on opening net cash flow and on each of the three categories (operating, investing and financing activities).
- (2) The *French* recommendation encourages the presentation of changes in the scope of consolidation collectively under one caption in the investing activities, but it also gives enterprises the option to attribute them to all the captions affected by changes in the scope of consolidation, which other statements do not.
- (3) The *IASC* exposure draft encourages enterprises, although it is not compulsory, to provide information which is not always required by the standards of other countries. The main example concerns segmental and geographic information, information on unused borrowing facilities (also required by *Australia*) and separation of cash payments made to increase operating capacity and cash payments made to maintain operating capacity. (*South Africa* encourages disclosure of this information directly in the cash flow statement.)

Conclusions

The survey shows that no two of the standards studied are strictly identical. SFAS 95 is influenced by the limits and constraints imposed by US accounting practices

and the organization of the profession, and the presentation (with cash flows separated from operational flows) and classification of activities (particularly operating activities) it adopts may appear arguable. However, due to its aim to provide relevant information for analysis, it imposes some useful details (for example, the items which comprise changes in working capital) and gives the additional information a role of major importance by requiring disclosures of information which can be used for adjustment of data in the financial statements if necessary (e.g., information on interest and taxes paid, non-cash operations).

The *New Zealand* and *Australian* cash flow statement offers information of a quality similar to that in the *United States*, although they have chosen some different options: bank overdrafts are included in cash, the definition of operating activities is more restricted, and the net cash flow from operations must be calculated by the direct method. The *United Kingdom/Ireland* standard is unusual as it has five headings instead of three, with interest and dividends paid and received grouped under the heading: "returns on investments and servicing of finance."

The OECCA recommendation includes some aspects of the French approach to accounting. Its recommended presentation for the statement of cash flows links operational flows and their corresponding cash flows, and the net cash flow from operations is computed based on the Gross Operating Cash Surplus (*Excédent Brut d'Exploitation*), excluding changes in inventory. It is similar to SFAS 95 as to the classification of operations, with some debatable differences (classification of short-term credits as cash, treatment of dividends received from companies accounted for by the equity method and lease instalments). Finally, its requirements for disclosures are less exact than those of SFAS 95 and reduce the quality of the information provided. The *South African* standard has some clear differences from US standards, with its inclusion of non-cash financing and investing transactions in the main statement, the unusual method for calculating net cash flow from operations (a combination of the direct and indirect methods), and a fairly vague definition of the concept of cash. The *Canadian* standard is broader than the American standard both in the design of the statement (as in South Africa, non-cash transactions are included) and the classification of flows (the choice is left to the enterprises). It also imposes less strict requirements for supplemental disclosures than the French recommendation.

The IASC text could be considered as a paradox. It offers several possible options in terms of the resolution of classification difficulties (interest and dividends received and paid, bank overdrafts, etc), which appears to be the result of yet another compromise. This conclusion is debatable since as a three-quarters majority vote is required for issuance in any individual standard, in most cases this majority can be obtained only by accepting alternatives. In the end, maybe a standard with alternatives is better than no standard at all.

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Appendix 1: Scope of the Comparative Survey – Research Methods

The schedule below shows the current state of standardization in terms of statement of cash flows.²⁰

Country	Standard Approved	Exposure Draft Issued	Draft Being Developed	No Draft ^b
Australia ^a		x		
Belgium				x
Canada	x			
Denmark				x
France	x			
Germany ^a				x
Ireland ^a	x			
Italy				x
Japan ^a	x			
Luxembourg				x
Netherlands ^a				x
New Zealand ^a	x			
Philippines ^a		x		
South Africa ^a	x			
Spain			x	
Sweden ^a				x
Switzerland				x
United Kingdom	x			
USA	x			
IASC		x		

^aCountries in which we interviewed Ernst & Young staff
^bTo the best of our knowledge.

Comments

- (1) We added to our list of countries the *IASC*, which having issued a Statement of Principles in 1990 then published an exposure draft (ED 36, July 1991).
- (2) *Australia* does not have an accounting standard requiring a Statement of Cash Flows. In 1986, an exposure draft was issued which proposed to amend AAS 12 and ASRB 1007 concerning Financial Reporting of Sources and Application of Funds, to require disclosure of some cash flow information. However, this was abandoned and the standard setters have decided to proceed instead with a full project on reporting cash flow information. A new exposure draft was issued in May 1991 (ED 52: “Statement of Cash Flows,” Australian Accounting Research Foundation).
- (3) Japan’s standardization body is called the Business Accounting Deliberation Council (BADC). This council is attached to the Japanese Ministry of Finance. In 1988, the BADC issued a rule for the establishment of a statement of cash flows as supplementary information (Financial Ministry Regulation (FMR) no. 41, 1988). However, the statement of cash flows is not part of the financial

statements, and we did not therefore include Japan in our final shortlist. It is nevertheless compulsory in Japan for listed companies of a certain size to publish such a statement.²¹

- (4) The Swedish Institute of Certified Public Accountants (FAR) has issued a recommendation regarding the preparation of a Statement of Changes in Financial Position. In the 1991 version the international developments, such as SFAS 95 and the successor to IAS 7, are discussed. This discussion opens the possibilities of using SFAS 95, for example. The recommendation explicitly states: "Swedish companies have for many years presented Statements of Changes in Financial Position that closely conform to the philosophy of the SFAS 95 concerning the classification of a company's operations and FAR takes the position that a Statement of Changes in Financial Position in accordance with this model is acceptable." FAR has been superseded by a new accounting body and a statement of cash flows does not seem to be a high priority for this body as the existing recommendation allows companies to adopt international standards in almost all respects.
- (5) The Philippine accounting Standards Council issued Exposure Draft No. 20, "Statement of Cash Flows," in August 1988. As indicated in the ED, page 13, this Statement is based on FASB Statement No. 95; we did not study this text specifically.

Appendix 2: Statement of Cash Flows – Summarized Comparison

	USA	France	Canada	New Zealand
1. Name	Statement of Cash Flows.	Tableau de financement analysant la variation de trésorerie (Statement of changes in financial position analyzing changes in cash).	Statement of changes in financial position – Etat de l'évolution de la situation financière. Alternative titles: Cash flow statement – statement of operating, financing and investing activities – statement of changes in cash resources.	Statement of Cash Flows.
2. Source (Accounting standard) and date of issue	Statements of Financial Accounting Standards No. 95 – November 1987; No. 102 – February 1989; No. 104 – December 1989.	Ordre des Experts Comptables – Recommendation No. 1.22 (serie Principes Comptables) – October 1988.	Section 1540 of the CICA Handbook revised in September 1985.	SSAP (Statement of Standard Accounting Practice) 10 – October 1987. Commentary on Statement of cash flows (SSAP-10) – October 1987. Interpretation No. 16: "An Interpretation of SSAP-10 Statement of Cash Flows" – April 1989.
3. Scope of application	Compulsory publication; all companies which publish complete financial statements, except defined benefit pension plans and highly liquid investment companies.	Recommended publication within company and consolidated accounts. Financial institutions and insurance companies are exempt.	Compulsory publication (\$1500.03 of CICA Handbook – Business Corporations Act).	Compulsory publication; audited external financial statements of all entities other than wholly owned subsidiaries of entities reporting in New Zealand. Recommended publication: all entities preparing external financial statements.
4. Effective date	Annual financial statements for fiscal years ending after July 15, 1988	No date indicated.	Years commencing on or after October 1, 1985.	Periods commencing on or after January 1, 1988.

5. Comparative figures	Statement of cash flows is provided for each period for which results of operations are provided.	No indication in the Statement. However, the example given in the appendices presents information relative to years <i>N</i> and <i>N-1</i> . The Recommendation also states that the statement of cash flows is part of the financial statements, and in accordance with the French commercial code, such documents must be presented in comparative form.	Corresponding figures for the preceding accounting period are required to be shown.
6. Objectives	<p>To provide relevant information of the cash receipts and cash payments of an enterprise during a period, to help third parties;</p> <p>(a) assess the enterprise's ability to generate positive future net cash flows;</p> <p>(b) assess the enterprise's ability to meet its obligations, its ability to pay dividends, and its need for external financing;</p> <p>(c) assess the reasons for differences between net income and associated cash receipts and payments;</p> <p>(d) assess the effects on an enterprise's financial position of both its cash and non-cash investing and financing transactions.</p>	<p>• To explain changes in the net assets and financial structure of an enterprise during a given period.</p> <p>• To explain the changes in cash in the same way as the income statement explains the net income.</p> <p>• To provide information of the operating, financing and investing activities of an enterprise and the effects of those activities on cash resources.</p> <p>• To assist users of financial statements in:</p> <p>(a) evaluating the liquidity and solvency of an enterprise;</p> <p>(b) assessing its ability to generate cash from internal sources, to repay debt obligations, to reinvest and to make distributions to owners.</p>	<p>• To provide information of the operating, financing and investing activities of an entity and the effects of those activities on cash resources.</p> <p>• To help investors, creditors and others to:</p> <p>(a) estimate the entity's ability to generate positive future net cash flows;</p> <p>(b) assess the entity's ability to meet its obligations and pay dividends and assess its needs for external financing;</p> <p>(c) note the difference between income and associated cash receipts and payments.</p>

Appendix 2 continued...

	USA	France	Canada	New Zealand
7. Concept of cash	<p><i>Cash and cash equivalents.</i> <i>Cash equivalents:</i> short-term, highly liquid investments that are both:</p> <p>(a) readily convertible to known amounts of cash;</p> <p>(b) so near their maturity that they present insignificant risk of changes in value because of changes in interest rates.</p> <p>Generally, only investments with original maturities of 3 months or less qualify under this definition.</p> <p>Bank overdrafts are excluded from cash equivalents and included in <i>financing activities</i>.</p>	<p>Difference between assets and liabilities which are highly liquid and payable on demand.</p> <p>Assets: cash, marketable securities, current account advances to third parties with no restriction to liquidity.</p> <p>Liabilities: bank credits, discounted notes receivable, current account advances from third parties which are repayable on demand.</p> <p>Bank overdrafts are included in <i>cash equivalents</i>.</p>	<p><i>Cash and cash equivalents.</i> Cash, net of short-term borrowings, and temporary investments.</p> <p>This may, in some cases, include certain elements of working capital when they are equivalent to cash.</p> <p>In application of this definition, bank overdrafts are included in <i>cash equivalents</i>.</p>	<p><i>Cash:</i> Cash on hand, demand deposits and other highly liquid investments in which an entity invests as part of its day-to-day cash management (treasury bills, reserve bank bills and commercial bills).</p> <p>Bank overdrafts (borrowings at call) are included in <i>cash equivalents</i> but borrowings subject to a term facility belong to <i>financing activities</i>.</p>
8. Classification of flows	<p>3 categories :</p> <p>operating, investing, and financing activities.</p>	<p>3 categories :</p> <p>operating, investing, and financing activities.</p>	<p>3 categories :</p> <p>operating, investing, and financing activities.</p>	<p>Classification by major sources and uses in 3 categories: operating, investing, and financing activities.</p>
9. Thorny issues – Differences	<ul style="list-style-type: none"> • Interest and dividends received are included in <i>operating activities</i>. • Interest paid is included in <i>operating activities</i>. • Dividends paid are included in <i>financing activities</i>. • Income taxes paid are included in <i>operating activities</i>. 	<ul style="list-style-type: none"> • Interest and dividends received are included in <i>operating activities</i>. • Interest paid is included in <i>operating activities</i>. • Dividends paid are included in <i>financing activities</i>. • Income taxes paid are included in <i>operating activities</i>. 	<p><i>The handbook gives only minimum rules concerning presentation. Classification within the 3 activities will depend upon how the enterprise views the substance of the particular items.</i></p> <ul style="list-style-type: none"> • Dividends paid may be: <ul style="list-style-type: none"> – included in financing activities; – included in operating activities; 	<ul style="list-style-type: none"> • Interest and dividends received (including from companies accounted for by the equity method) in relation to investments not falling within the definition of cash are included in <i>investing activities</i>. • Interest and dividends paid in relation to the capital structure, including debt not falling within the definition of cash, are included in <i>financing activities</i>.

<ul style="list-style-type: none">• Dividends received from companies accounted for by the equity method are included in <i>operating activities</i>.• Capitalized share of lease instalments is included in <i>financing activities</i>.• Possible to attribute flows generated by hedging operations to the activity in which the hedged flows are included.	<ul style="list-style-type: none">• Dividends received from companies accounted for by the equity method are included in <i>investing activities</i>.• Capitalized share of lease instalments is included in <i>investing activities</i>.• No details are given on the treatment of hedging operations	<ul style="list-style-type: none">– classified separately (for example, shown immediately after operating activities).• Capital expenditures for regular replacements of fixed assets may be classified as an operating activity.• No details are given on the classification of interest and taxes paid, dividends and interest received, or the treatment of hedging operations	<ul style="list-style-type: none">(However, for both the above points, different classification may be possible, depending on the nature of the company's activity).• Income taxes paid are included in <i>operating activities</i>.• No details are given on the classification of lease instalments or the treatment of hedging operations.
<p>10. Net reporting of gross cash flows</p>	<p>Changes during the period in certain assets and liabilities should be reported net because knowledge of the gross cash receipts and payments related to them may not be necessary. Items that qualify for net reporting because their turnover is quick, their amounts are large, and their maturities are short are cash receipts and payments pertaining to:</p> <p>(a) investments (other than cash equivalents);</p> <p>(b) loans receivable;</p> <p>(c) debt;</p> <p>providing that the original maturity of the asset or liability is 3 months or less.</p> <p>This would also apply to receipts and payments of cash on behalf of third parties.</p>	<p>No indication in the Statement.</p>	<p>Possibility of net reporting of changes in cash flows relating to assets or liabilities when cash turnover is high and maturities are short. Examples:</p> <ul style="list-style-type: none">• roll-over loans and deposits covered by an arranged finance facility;• holding or disbursing of cash on behalf of a customer.

Appendix 2. *continued...* USA

	France	Canada	New Zealand
11. Extraordinary items	No indication in the Statement.	Cash flows resulting from extraordinary items should be disclosed separately in the Statement.	No indication in the Statement.
12. Non-cash investing and financing transactions	Non-cash investing and financing transactions should not be reported in the Statement but should be reported in related disclosures.	Only transactions which cause a change in the cash position are represented in the Statement. No disclosure is required concerning non-cash financing and investing transactions.	Investing and financing activities should not appear in the Statement to the extent that they do not involve cash flows. No disclosure is required concerning these operations.
13. Methods of calculating cash flows from operating activities	Recommends calculation of the net cash flow from operating activities by the direct method using at least 7 categories of payments and receipts. Otherwise, it should be calculated on the basis of the net income showing of least changes in inventories, debts and receivables.	Net cash now from operating activities should be calculated either based on net income (option 1) or on Gross Cash Surplus from Operations (Excédent Brut d'Exploitation - EBE) excluding changes in inventories (option 2). No specific indication on the amount of detail to provide concerning cash discrepancies.	Cash flows from operating activities should be presented using the direct method within the Statement (1987). Examples of categories of receipts and expenses are provided. SSAP-10 does not prohibit the disclosure of cash flows calculated by the indirect method in a separate reconciliation if useful (1989).
14. Impact of changes in scope of consolidation	Acquisition or sale price (net of cash and cash equivalents acquired or disposed) included in <i>investing activities</i> . Information on non cash investing and financing	Acquisition or sale price (net of cash and cash equivalents acquired or disposed) included in <i>investing activities</i> . Disclosure of detail of assets acquired or disposed and	Acquisition or sale price (net of cash and cash equivalents acquired or disposed) included in <i>investing activities</i> . No information on companies acquired or disposed need be

activities must be included in the disclosures.	Information on the main changes in scope of consolidation must be included in the disclosures.	liabilities acquired or assigned in the body of the Statement or in a note to the Statement.	disclosed, as this information is required by SSAP-8.
15. Impact of changes in exchange rates	Transactions are converted at the rate of the day or an appropriate average rate. The impact of these adjustments is shown in a separate line in the reconciliation of beginning and ending balances of cash.	No indication in the Statement.	The impact of the exchange rates is shown in a separate line as part of the reconciliation of the change in cash during the period.

Appendix 2. continued...

France

Canada

New Zealand

16. Supplemental disclosures

USA	France	Canada	New Zealand
<ul style="list-style-type: none"> • Definition of net cash position based on balance sheet headings. • Relationship between the net income and the cash flow from operations when the latter is calculated by the direct method. • Information on taxes and interest paid when the net cash flow from operating activities is calculated based on the net income. • Information on non cash financing and investing operations. • No analysis of effect of exchange rate variations required. • No segmental information required. • No information required concerning the separation of cash payments made for maintenance and development. • No information is required on unused borrowing facilities or cash flows from joint ventures. 	<ul style="list-style-type: none"> • Definition of net cash position based on balance sheet headings. • Relationship between the net income and the net cash flow from operations when the net cash flow from operations is calculated based on the EBE. • No information required concerning taxes and interest paid. • Information limited to the types of the main changes in the scope of consolidation. • Analysis of the impact on net cash flow of variations in exchange rates if this impact is material. • No segmental information required. • No information required concerning the separation of cash payments made for maintenance and development. • No information is required on unused borrowing facilities or cash flows from joint ventures. 	<ul style="list-style-type: none"> • Components of cash and cash equivalents. • No reconciliation of net income and net cash flow from operations is required when the latter is calculated by the direct method. • No information required concerning taxes and interest paid. • Non-cash financing and investing transactions are shown in the main body of the statement. • No analysis of effect of exchange rate variations required. • No segmental information required. • No information required concerning the separation of cash payments made for maintenance and development. • No information is required on unused borrowing facilities or cash flows from joint ventures. 	<ul style="list-style-type: none"> • Reconciliation of the components of cash with the relevant balance sheet items. • No reconciliation of net income and net cash flow from operations is required, but it may be provided if useful. • Interest and taxes paid, as well as interest and dividends received, are separately disclosed within the statement. • No information is required on non cash financing and investing transactions. • No analysis of effect of exchange rate variations required. • No segmental information required. • No information required concerning the separation of cash payments made for maintenance and development. • No information is required on unused borrowing facilities or cash flows from joint ventures.

17. Presentation of a model	3 examples:	1 example with 2 options:	No example.	1 example – Direct method.
	<ul style="list-style-type: none">• Consolidated statement – manufacturing activity with no foreign subsidiaries – Direct and indirect methods.• Consolidated statement, multinational corporation, manufacturing activity – Direct method.• Financial institution – Direct method.	<ul style="list-style-type: none">• option 1: indirect method.• option 2: direct method.		

Appendix 2. continued...

South Africa		IASC		United Kingdom and Ireland	Australia
Cash Flow Information		Cash Flow Statements.		Cash Flow Statements	Statement of Cash Flows.
1. Name	Cash Flow Information	Exposure Draft 36 – July 1991.		Financial Reporting Standard No. 1 – September, 1991.	Exposure Draft 52 – May 1991.
2. Source (Accounting standard) and date of issue	Statement of Generally Accepted Accounting Practice AC 118 – July, 1988.	This Statement applies to the financial statements of all enterprises, including financial institutions.		This FRS applies to all financial statements intended to give a true and fair view of the financial position and profit or loss (or income and expenditure). Exemption for most small reporting entities and wholly owned subsidiaries.	Applicable to each reporting entity in the public and private sectors. The following types of companies which prepare financial reports pursuant to companies legislation are reporting entities: (a) a listed corporation; (b) a borrowing corporation; and (c) a company which is not a subsidiary of a holding company incorporated in Australia and which is a subsidiary of a foreign company where that foreign company has its securities listed for quotation on a stock market or those securities are traded on a stock market.
3. Scope of application	The Statement should be disclosed in an annex, to the balance sheet (Companies Act).	Comments should be submitted in writing so as to be received by December 31, 1991. The IAS will probably be issued in 1992, with an effective date by December 31, 1992.		As soon as possible and all periods ending on or after March 23, 1992.	Comments should be submitted in writing so as to arrive no later than July 31, 1991. Standard on cash flows, once approved, would apply to financial periods ending on or after June 30 1992
4 Effective date	As soon as possible and all periods commencing on or after October 1, 1988.	Comments should be submitted in writing so as to be received by December 31, 1991. The IAS will probably be issued in 1992, with an effective date by December 31, 1992.		As soon as possible and all periods ending on or after March 23, 1992.	Comments should be submitted in writing so as to arrive no later than July 31, 1991. Standard on cash flows, once approved, would apply to financial periods ending on or after June 30 1992

5. Comparative figures	Comparative amounts should be provided in respect of the Cash Flow Statement, covering a period of 2 to 5 years depending on the type of activity concerned.	Corresponding amounts for the preceding period are required to be presented in accordance with IAS 5.	Comparative figures should be given for all items (no indication of the period).	The financial report shall disclose information for the comparative reporting period corresponding to the disclosures specified for the reporting period, except in respect of the following: the first consolidated financial report after the entity becomes a parent entity.
6. Objectives	To provide users of financial statements with information concerning the source and use of all financial resources during the period: in particular details of cash generated or utilized by operations, investing and financing activities.	<ul style="list-style-type: none">• To provide information of the historical changes in cash and cash equivalents of an enterprise by means of a Cash Flow Statement which classifies cash flows during the period by operating, investing and financial activities.• To enable users to evaluate the changes in economic resources of an enterprise, its financial structure (including its liquidity and solvency) and its ability to alter the amounts and timing of cash flows in order to adapt to changing circumstances and opportunities.• To be a useful indicator of the amount, timing and certainty of future cash flows.• To provide information that may be used to examine the relationship between profitability and net cash flow and the impact of changing prices.	<ul style="list-style-type: none">• To report on a standard basis the cash generation and cash absorption for a period.• To assist users of the financial statements in their assessment of the reporting entity's liquidity, viability and financial flexibility.	<ul style="list-style-type: none">• To provide relevant information to users about the cash inflows and cash outflows of an entity during a reporting period.• To communicate information about an entity's liquidity and solvency, the cash flows generated by the entity by converting goods and services it provides into cash, the capacity of the entity to finance growth from cash flows generated by its operating activities and from lending funds to other entities, and the capacity of the entity to adapt to changes in its environment and in management strategies.• To help users assess the ability of an enterprise to (a) generate positive net cash flows, (b) meet its financial commitments and pay dividends, (c) fund changes in the scope and/or nature of its activities, and (d) borrow where necessary.

Appendix 2, continued...

	South Africa	IASC	United Kingdom and Ireland	Australia
7. Concept of cash	Cash (cash at bank and on hand) and <i>cash equivalents</i> , such as money market instruments.	<p><i>Cash and cash equivalents.</i> <i>Cash</i>: cash on hand and deposits with banks. <i>Cash equivalents</i>: short-term highly liquid investments which are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.</p> <p>Bank overdrafts can be considered: – as <i>financing activities</i>; – or as components of cash and <i>cash equivalents</i>.</p>	<p><i>Cash and cash equivalents.</i> <i>Cash</i>: cash in hand, deposits repayable on demand. <i>Cash equivalents</i>: short-term, highly liquid investments which are readily convertible to known amounts of cash without notice and which were within 3 months of maturity when acquired. Cash equivalents must not have any significant risk of changes in value owing to changes in interest rates.</p> <p>Advances from banks repayable within 3 months from the date of the advance should be include in <i>cash and cash equivalents</i>.</p>	<p><i>Cash</i>: Cash on hand, demand deposits and other highly liquid investments in which an entity invests as part of its day-to-day cash management.</p> <p>Bank overdrafts (borrowings at call) are included in <i>cash equivalents</i> but borrowings subject to a term facility belong to <i>financing activities</i>.</p>
8. Classification of flows	<p>3 categories:</p> <ul style="list-style-type: none"> • cash retained from operations; • cash utilized in investing activities; • cash effects of financing activities. 	<p>3 categories:</p> <p>operating, investing and financing activities.</p>	<p>5 categories:</p> <p>operating activities; returns on investments and servicing of finance; taxation; investing activities; financing.</p>	<p>3 categories:</p> <p>operating, investing and financing activities</p>
9. Thorny issues – Differences	<ul style="list-style-type: none"> • Finance costs and taxation are included in <i>operating activities</i>. • Dividends paid are included in <i>operating activities</i> and are shown separately. • Interest and dividends received, including dividends received from companies 	<ul style="list-style-type: none"> • Cash flows arising from taxes on income should be classified as cash flows from <i>operating activities</i> and separately disclosed. • Interest and dividends received and paid: – should be classified in a 	<ul style="list-style-type: none"> • Taxation cash flows in relation to revenue and capital profits should be included in <i>taxation</i> (“operating activities”). • Interest and dividends paid are included in <i>returns on investments and servicing of finance</i> (“operating activities”). 	<ul style="list-style-type: none"> • Income taxes paid, including capital gains tax, are included in operating activities. Other taxation cash flows are required to be classified according to the nature of the underlying transactions on which the taxation arose. • Interest and dividends paid in

accounted for by the equity method are included in <i>operating activities</i> and are shown separately.		<ul style="list-style-type: none">• No instructions are given concerning hedging operations.		consistent manner from period to period; – and each separately disclosed as one of <i>operating, investing or financing activities</i> .		<ul style="list-style-type: none">• Interest and dividends received are included in <i>returns on investments and servicing of finance</i> (“operating activities”).• A different classification can be used if it gives a fairer representation of the cash flows (only possible in extremely rare circumstances).• Hedging operations are to be classified in the same category as the cash flows from the items being hedged.		relation to the capital structure are included in <i>financing activities</i> .		<ul style="list-style-type: none">• Interest and dividends received are included in <i>operating activities</i>.• Hedging operations: foreign currency transactions are to be classified in the same category as the cash flows from the items being hedged.	
10. Net reporting of gross cash flows		Net amounts may be used where disclosure of gross amounts is inappropriate or impracticable.		Net reporting of certain cash flows is allowed for financial institutions only:		Reporting of cash flows from operations on a net basis is allowed.		Cash flows for the following items may be reported on a net basis:		<ul style="list-style-type: none">(a) items in which the entity is substantively holding or disbursing cash on behalf of its customers; and(b) investments, loans receivable and loans payable where turnover is rapid, the amounts are large and the items are so near to their maturity that there is insignificant risk of changes in their values arising from changes in interest rates.	

Appendix 2. *continued...* South Africa

	IASC	United Kingdom and Ireland	Australia
11. Extraordinary items	Cash generated by operations excludes any cash flows related to extraordinary items. These flows accordingly need to be disclosed separately.	The cash flows arising from unusual items should be classified as arising from operating, investing or financing activities as appropriate and separately disclosed.	Exceptional cash flows and cash flows relating to extraordinary items are to be shown under the relevant economic standard headings.
12. Non cash investing and financing transactions	Non-cash items are included in investing and financing activities.	Investing and financing transaction that do not require the use of cash or cash equivalents should be excluded from a cash flow Statement. Such transactions should be disclosed elsewhere.	These transactions should not be reported among the cash flows but in a note to the Statement.
13. Methods of calculating cash flows from operating activities	Cash generated by operations is normally calculated by adjusting operating income before tax for the period for items which do not involve the movement of cash (<i>indirect method</i>). The following items are added (or subtracted): interest and dividends received, cash derived from changes in working capital, interest and taxes paid, and dividends distributed.	Enterprises are encouraged to report cash flows from operating activities using the <i>direct method</i> . However, the Statement also permits the use of the <i>indirect method</i> .	Cash flow from operating activities should be presented using the <i>direct method</i> whereby the relevant cash inflows and cash outflows are reported in gross terms. The compulsory categories are: sales revenue, cost of sales, interest received, dividends received and taxes paid.
14. Impact of changes in scope of consolidation	The cost of the investment is shown as a single line item under <i>investing activities</i> . Information on the assets and liabilities acquired or disposed of are given in the notes to the financial statements, with a clear distinction between cash flows, working capital and	The acquisition is recorded as part of <i>investing activities</i> (net of cash and cash equivalents acquired). A note discloses a summary of the effects of acquisitions on disposals indicating how much of the consideration comprised cash and cash equivalents and	Entity acquisition on disposals price (<i>net of the cash and cash equivalents acquired or disposed</i>) included in <i>investing activities</i> . Disclosure of detail of assets acquired (or disposed) and liabilities shall be disclosed in the note in the financial report.

the amounts of cash and cash equivalents transferred as a result of the acquisitions and disposals. Material effects on amounts reported under each of the standard headings reflecting the cash flow of a subsidiary acquired or disposed of in the period should be disclosed, as far as practicable,

equivalents in the subsidiary acquired or disposed, and the portion of the price paid in cash.

other assets and liabilities.

15. Impact of changes in exchange rates	<p>No indication in the Statement.</p> <p>The cash flows of a foreign subsidiary should be recorded in the reporting currency of an entity by applying the exchange rate at the time of the cash now, or an appropriate average rate. The effect of exchange rate changes on cash and cash equivalents is reported in the Statement in order to reconcile cash and cash equivalents at the beginning and end of period. This amount is presented separately from cash flows from operating, investing and financing activities.</p>	<p>Cash flows from a foreign subsidiary are to be included in the cash flow statement on the basis used for translating the results of those activities in the profit and loss account of the reporting entity.</p>	<p>The point is not specifically handled in the standard; the examples provided in the appendices show the effect of exchange rate variations in a specific line which is part of the reconciliation of beginning net cash flow and ending net cash flow.</p>
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Appendix 2. continued...

16. Supplemental disclosures

	South Africa	IASC	United Kingdom and Ireland	Australia
	<ul style="list-style-type: none"> • No information is required on the definition of components of cash and cash equivalents. • Reconciliation of the cash generated by operations to operating income disclosed in the income statement, disclosing adjustments for non-cash items included in income for the period. • No information on non-cash financing and investing transactions (which are included in the main statement). • Acquisition of a subsidiary: details of the assets and liabilities acquired, distinguishing between cash, working capital and other assets and liabilities. • No segmental information required. • When it is possible in practical terms to make a distinction between investments for maintenance and for development, this is shown in the statement of cash flow information. • No information is required on unused borrowing facilities or cash flows from joint ventures. 	<ul style="list-style-type: none"> • Components of cash and cash equivalents and reconciliation of these amounts with the equivalent items in the balance sheet. • Reconciliation from the movement in net cash flow to the net profit where cash flows are reported using the direct method is <i>not required</i>. • Non-cash investing and financing transactions. • Acquisitions and disposals of subsidiaries; amounts of assets and liabilities acquired or disposed. Enterprises are also encouraged to provide the following information: <ul style="list-style-type: none"> • The amount of the cash flows arising from the operating, investing and financing activities of each reported industry and geographical segment. • Amount of unused borrowing facilities that may be available for future operating activities and to settle capital commitments. • Cash payments that represent 	<ul style="list-style-type: none"> • Components of cash and cash equivalents. • Reconciliation of the cash and cash equivalents and amounts shown in the financing section with the related item in the opening and closing balance sheets. • Reconciliation from the movement in net cash flow to the operating profit <i>should always be disclosed</i> but not in the primary cash flow statement. • Material non-cash transactions. • Effects of acquisition and disposals of subsidiaries. Material effects on amounts reported under each of the standard headings reflecting the cash flow of a subsidiary acquired or disposed of in the period should be disclosed. • Reporting entities which find it useful to make a distinction between expenditure for maintenance and for development are encouraged to do so within the statement or by way of note. • No information is required on unused borrowing facilities or 	<ul style="list-style-type: none"> • Components of cash and cash equivalents and reconciliation of these amounts with the equivalent items in the balance sheet. • Reconciliation from the movement in net cash flow to the net profit. • Non-cash financing and investing transactions. • Detailed information relating to the acquisition or disposal of entity during the reporting period. • No information is required concerning the breakdown by segment or geographic areas for cash flows from each of the three functions. • No information is required concerning the separation of investments for maintenance and development. • No information is required on unused borrowing facilities. • No information is required on cash flows from joint ventures.

increases in operating capacity separately from cash payments required to maintain the operating capacity.

- Cash flows generated by joint ventures.

17. Presentation of a model	1 example; indirect method.	3 examples: <ul style="list-style-type: none">– Direct method;– Indirect method;– Direct method cash flow statement for a financial institution.	6 examples: <ul style="list-style-type: none">– Single company (indirect method);– Group (direct method);– Property investment company (direct method);– Investment company (direct method);– Bank (indirect method);– Insurance company (direct method).	3 examples: <ul style="list-style-type: none">– business entity (direct method);– Non-business entity in the private or public sector (direct method);– Financial institution (prepared using the direct method).
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Notes

1. Hervé Stolowy, as a member of the working group created by the French Institute, assisted in the preparation of the new Standard and also prepared a guide of implementation of the Standard which was published by the Institute in January 1991.
2. Statement of Financial Accounting Standards No. 95 issued in late 1987 by the Financial Accounting Standards Board, referred to as SFAS 95 in the rest of this article.
3. References from GB legislation.
4. A company qualifies as small if it satisfies two or more of the following requirements, among other conditions: (a) turnover \leq £2 million; (b) balance sheet total \leq £975 000; (c) number of employees \leq 50.
5. The Canadian Institute of Chartered Accountants published an accounting guideline for financial institutions in June 1991 implementing section 1540 of its Handbook.
6. In fact, this standard concerns cash flows only, in contrast to the Canadian standard which at first sight appears to have a similar objective.
7. *GENERALLY ACCEPTED ACCOUNTING PRACTICE: A South African Viewpoint*, Juta and Co. Ltd, 2nd edition 1982, Ch. 20, Cash flow information, pp. 366–396.
8. New Zealand and Australia do not use the concept of “cash and cash equivalents” explicitly but their standards give an equivalent definition.
9. “Preparing and Presenting Statements of Cash Flows,” *Journal of Accountancy* (January 1991), 113.
10. “Le tableau des flux de trésorerie de l’Ordre des Experts-Comptables: critiques et limites,” *Analyse financière* no. 84, 1er trimestre 1991, pp. 45–53.
11. Hervé Stolowy: “Le tableau de financement: Guide d’application de la recommandation de l’Ordre des Experts-Comptables”, p. 31.
12. *Op. cit.*, p. 113.
13. It has also been suggested that the real reason in these three cases is that a large enough minority wanted retention of the indirect method.
14. Christian Hoarau, “L’analyse financière par les flux: a-t-on besoin de modèle?”, *Analyse financière* no. 84, 1er trimestre 1991, pp. 54–63.
15. The UK/Ireland standard explicitly defines three separate headings: “operating activities” in the strictest sense, “returns of investments and servicing of finance” and “taxation.”
16. This heading would be included in operating activities in most of the other countries studied.
17. This point has been the subject of much debate in the United States: it should be noted that SFAS 95 was adopted by four votes to three. One of the main objections of the opposing FASB members was that interest expenses should be included in the category of financing activities.
18. “The Statement of Cash Flows: Some Technical Issues”, *The Practical Accountant* (March 1990), p. 53.
19. Section 3.3, information related to the concept of cash; section 4.1, reconciliation of the net income to the net cash flow from operations; sections 5.1.1. and 5.1.2, information related to interest and taxes paid; section 5.2.1, non-cash financing and investing activities.
20. Only the statement of cash flows is considered here, not the statement of changes in financial position analyzing changes in working capital.
21. The information on Japan contained in this article is taken from the presentation made by Professors N. Kamata and T. Sawamura at the International Conference on Cash Flow Analysis, Nice, December 13–14, 1990.

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The International Harmonization of Accounting: In Search of Influence

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Key words: Enforcement; Harmonization; IASC; IFAC; International standard setting

Abstract: *The trend towards the international harmonization of accounting through the influence of international standards seems to have gained increasing support over the last two decades. The membership of the International Federation of Accountants, (IFAC), for example, has grown from 63 in 1978 to 106 at the present time. The move towards harmonization, however, seems to be impeded by the lack of enforcement powers conferred on the international standard-setting bodies, IFAC and its sister body, the International Accounting Standards Committee. A potentially powerful “white knight” has recently arrived on the scene, offering to recognize the international standards. In return for such recognition, the international bodies appear to have surrendered a degree of autonomy.*

Introduction

The purpose of this paper is to describe in general terms the various moves towards international harmonization and in particular the progress which has been made to that end and to review the influence of agencies outside the accounting profession in the setting and enforcement of international standards.

Historical Background

The move towards greater harmonization of professional accounting practices has been traced back to 1904 and the first international accounting congress in St. Louis, Missouri (Samuels and Piper, 1985, p. 59, Mueller, 1979 p. 7). Subsequent congresses were held at approximately five-yearly intervals. The issues discussed in the earlier congresses appear to be largely practice oriented. Views differ on the relative

importance of international issues: Samuels and Piper (1985) report that “international issues were not important” (p. 59), whereas Mueller (1979) states “Attention to international harmonization (in later years standardization) established itself from the beginning as a central purpose of these Congresses” (p. 7). In any event by the 1950s calls for greater efforts towards harmonization were becoming more frequent.

In a tripartite move, Canada, the United Kingdom, and the United States formed the Accountants International Study Group (AISG) in 1966. The stated purpose of the AISG was “to institute comparative studies as to accounting thought and practice in participating countries, to make reports from time to time which, subject to the prior approval of the sponsoring institutes, would be issued to members of those institutes” (Thomas, 1970, p. 60). The group produced more than 20 reports on both accounting and auditing issues. These reports are evidence that professional agreement through international discussion could be reached even on issues which had vexed national standard-setters. Whether any action at a national level resulted from the recommendations in the reports is another matter.

It was not until the 10th International Congress in Sydney in 1972 that firm proposals were put forward (and accepted) for means to achieve real progress in international harmonization. Plans were laid to establish an organization to develop accounting standards for a worldwide audience of accountants. The International Accounting Standards Committee (IASC), with headquarters in London, had its first meeting in June 1973.

In 1977, just before the next international congress, the AISG was disbanded and the International Federation of Accountants (IFAC) was formed, operating from New York City. The broad objective of IFAC is “the development and enhancement of a coordinated worldwide accountancy profession with harmonized standards”, (*IFAC Constitution*, paragraph 2). Its mission is to develop international guidance in areas other than financial accounting.

The first standing committees of IFAC were charged with the responsibility to develop guidance on auditing, education, ethics, and management accounting. IFAC was also to assume responsibility for organizing future world congresses. (For contemporary descriptions of the objectives and operations of IFAC, see Chetkovich (1979) and Sempier (1979)). Later IFAC was to add another committee to cover public sector issues.

IFAC and IASC have continued to lead separate existences. Under a statement of mutual commitment, agreed between the two bodies in 1982, their relationship has been clarified:

- (1) they have a common membership;
- (2) the IFAC Council nominates as many as 13 members of the Board of IASC;
- (3) IASC reports annually to the IFAC Council;
- (4) IFAC recognizes the autonomy of IASC in setting international accounting standards;
- (5) IFAC supports the work of IASC and requires its member bodies to do the same;
- (6) IFAC contributes 10% of the annual IASC budget;

- (7) the President of IFAC is entitled to attend and to speak at IASC meetings but not to vote, and likewise the Chairman of IASC Board has a similar entitlement in regard to the IFAC Council meetings.

These arrangements ensure that there is a close working relationship between IFAC and IASC while maintaining the autonomy of both bodies. Nevertheless there have been calls for the two to be more closely linked and even merged. A recent review, commissioned by the eight countries which provide the bulk of IFAC/IASC funding into the IFAC/IASC organizational arrangements, accepted the status quo while urging IFAC and IASC to seek the long-term objective of becoming one body.

Advantages of International Standards

The increasing internationalization of the capital markets provides important opportunities for multinational corporations. Tondkar et al. (1989) describe a number of financial, strategic, and commercial advantages motivating large corporations to seek equity listings on a foreign stock exchange. However, they also report that "one of the major problems faced by companies seeking foreign listing is the difference in regulations and listing requirements of various stock exchanges around the world. Compliance with the regulations prescribed by the various stock exchanges ... may require major modifications or even restatement of financial statements" (p. 147). International harmonization in accounting (and auditing) would clearly provide a solution to this problem.

Both Samuels and Piper (1985, p. 56) and Nobes (1991, p. 70) distinguish between *standardization* and *harmonization*, the former giving an impression of uniformity and rigidity, the latter containing the idea of narrowing areas of difference but stopping short of uniformity. Whatever the outcome of the present developments on the international scene, it is clear that for progress to be made some countries will have to abandon some of their existing practices.

Those countries may be persuaded that the advantages of compliance with international pronouncements outweigh the loss of sovereignty in the setting of national standards. In addition to multinational companies, other beneficiaries of greater harmonization/standardization include (based on Samuels and Piper, 1985, pp. 75–82):

- (1) International investors – comparison of investment opportunities will be facilitated if financial statements globally are drawn up on a consistent and uniform basis.
- (2) International accounting firms – the recruitment and transfer of staff across international boundaries would be assisted if the required training and possession of skills and knowledge were similar in different countries.
- (3) Individual accounting practitioners – if training requirements and technical standards were harmonized, job opportunities would be created or expanded both in terms of the possibility of relocation and work referred from abroad.
- (4) Accounting institutes (especially in developing countries) – institutes may avoid duplication of research and standard-setting efforts by adopting nationally the

standards developed and accepted at the international level. Many already do so.

- (5) Regulatory agencies – both tax authorities and securities regulators would find their supervisory and enforcement roles eased if national differences in financial reporting and auditing were reduced.

Criticisms of the Standardization/Harmonization Process

Accounting Imperialism

The influence of major countries, especially the United Kingdom and the United States, is certainly clear in the pronouncements of both IFAC and IASC. Resistance can be expected in countries where the national adoption of international pronouncements or standards developed by leading countries may be perceived as being the imposition of standards by economically superior countries on developing countries, – a form of accounting colonialism (e.g., Hove, 1986; Francalanza, 1988).

Both IFAC and IASC have tried to allay fears that their pronouncements are the product of debate between only leading countries. Under the mutual commitments, IFAC is required to nominate at least three developing countries to the IASC Board. IFAC includes in its own Council and committees representatives from developing countries, though there is no constitutional requirement to do so. Nevertheless, since discussions are always in English (the official language of the IFAC and IASC pronouncements), committee members from non-Anglo countries must be at a disadvantage.

Compliance with international standards, however, may not be costless even for those countries which may be regarded as leading the accountancy profession. For example, under the IASC's E32, *Comparability of Financial Statements* (IASC, 1989) the required or preferred methods of inventory valuation were FIFO and weighted average cost; LIFO (the generally accepted method in the United States) was an allowed alternative but US corporations wishing to comply with International Accounting Standards (IASs) would have been required to disclose a reconciliation of their (LIFO-based) income and shareholders' interests to the amounts that would have been determined using the preferred method. A more recent exposure draft, E38, *Inventories* (IASC, 1991) seeks to ban LIFO altogether.

Following the revision to International Auditing Guideline (IAG) 13, *The Auditor's Report on Financial Statements*, the current UK practice of qualifying audit reports for uncertainty is no longer in conformity with the IAG, and the UK Auditing Practices Board is having to reconsider its guidance on this matter (*Accountancy Age*, April 11, 1991, p. 3).

Inappropriate Standards

Other criticisms of the harmonization process center around the fact that standards set internationally cannot possibly cater for the wide range of national circumstances.

legal systems, stages of economic development, and cultural differences (e.g., Samuels and Piper, 1985, pp. 100–109). However, such arguments are effectively refuted by Aitken and Islam (1983) on the grounds that the nature of economic transactions and the accounting for them do not vary in essence.

Low Response Rates to Exposure Drafts

Proposed pronouncements of both IASC and IFAC are exposed for comment. This exposure process gives outsiders the chance to contribute to the standard-setting process (provided the standard-setters are responsive to the letters of comment they receive). However, in general the response rate to international exposure drafts tends to be relatively low. Letters of comment received by IASC are now a matter of public record but IFAC has yet to follow this course, so the nature of the comments can only be gauged from the press releases issued by IFAC on completion of a project.

Compromises

On relatively straightforward and uncontroversial issues it may not be difficult for a committee of standard-setters to reach unanimous agreement on the preferred position. On other issues compromise may have to be struck in order for a proposed standard to be accepted. In addition forceful submissions (even if few in number) in response to exposure drafts may compel the standard-setters to relax the requirements contained in a proposed standard to avoid its being rejected on publication.

This is true even at a national level. In the United Kingdom the former Accounting Standards Committee (ASC) attracted criticism for issuing standards which were considered to be inadequate or permissive. It is not difficult to imagine that seeking a consensus in the international arena would require standard-setters to do more “deals” and to be more inclined to incorporate permitted alternatives in the standards.

Rivera (1989) comments “most of the IAS issued probably have been made deliberately flexible so as not to upset any of the leading accounting countries” (p. 328).

The IASC admits as much in E32 (IASC, 1989), the purpose of which is “to set out proposals for the removal of free choices of accounting treatments presently permitted in International Accounting Standards. Such free choices were necessary in the past to gain acceptance of certain Standards”. (paragraph 3).

Compliance with International Accounting Standards

In an early review of the progress of harmonization from the establishment of the IASC to 1979, Nair and Frank (1981) noted an increased level of harmonization during the period.

From a study of the compliance of financial reporting in five countries represented on IASC with five of the IASs issued by IASC, Evans and Taylor (1982) concluded that “the IASC has had very little impact on the accounting practices of the countries surveyed. Except for a few instances, a country following a particular method prior to the promulgation of an IASC standard continued to follow the same practice after the standard’s issuance” (p. 126). They accept, however, that in some of the countries this may have been due to the fact that the extant national standard already was in compliance with the subsequent pronouncement of the IASC.

In a later survey of large firm practitioners in 40 countries (all with IFAC member bodies), Taylor et al. (1986) concluded that the IASC “appears to be succeeding in improving the comparability and consistency of international accounting reports and thereby reducing the diversity of international reporting practices” (p. 9).

McKinnon and Janell (1983) examine compliance with three IASs and conclude that “the IASC has not succeeded in changing existing standards or setting new standards. [However,] it has succeeded in codifying generally accepted practice, in serving as a neutral source for standards, and in influencing groups with enforcement powers” (p. 33).

Doupnik (1987) examines 70 financial reporting practices (including 47 issues covered by IASs) in 46 countries. He compares his results with those of a similar survey performed by Price Waterhouse (PW) in 1975. From a statistical analysis of the two data sets he concludes that compliance with IASs improved over the period 1975–1983.

Nobes (1981) criticizes the methodology and results of such studies on the grounds, *inter alia*, that the original PW survey data contained errors. Further criticism comes from Tay and Parker (1990) who claim that a lack of clarity of the concepts at issue may explain the conflicting results of the various studies. They indicate that some of the studies attempted to measure *de jure* harmonization while others sought to measure *de facto* harmonization.

The same confusion of terms is evident in a survey conducted by the IASC (1988) of member bodies’ compliance with all its standards. The result of this survey was that “in the majority of countries, national requirements or practice conform with 23 out of 25 IASs. The exceptions are IAS 14, Reporting Financial Information by Segment, and IAS 15, Information Reflecting the Effects of Changing Prices” (p. 3). The high level of self-assessed compliance is boosted by the inclusion of national *practice* as well as national *requirements*, so that while a country’s national standards may not cover the subject of an IAS, the generally accepted practice in that country may be largely in conformity with that IAS. Another reason for the apparently high level of compliance could be the permissiveness of the original IASs.

Compliance with IFAC Pronouncements

The results of IFAC surveys, conducted every three years, of member bodies show a similarly high level of compliance with most of the IFAC guidance (IFAC, 1987).

though the results are not presented or analyzed in the same detail as those of the IASC.

Authority of International Auditing Pronouncements

According to the *Preface to International Auditing Guidelines*, IAGs apply whenever an independent audit is performed. However, it is recognized that IAGs do not override local regulations in a particular country. Nevertheless, under the IFAC Constitution, member bodies should use their best endeavours:

- “(i) to work towards implementation, when and to the extent possible under local conditions, of [IFAC] guidelines and
- (ii) specifically to incorporate in their national auditing standards the principles on which are based International Auditing Guidelines.” (para. 6 (c))

This obligation is clearly phrased in permissive terms to avoid causing member bodies difficulties in complying when local conditions or laws conflict with international guidance, although the drafting leaves some doubt as to whether the permissiveness extends to auditing guidelines.

The obligation is neither enforced nor enforceable. No penalty is incurred for non-compliance; the power to suspend or expel a member body from IFAC membership can be exercised only in the case of non-payment of financial contribution or acts bringing the international accounting profession into disrepute.

A close reading of the above section of the IFAC Constitution also raises the question of whether the obligation is met when member bodies incorporate the IAG principles in national auditing *guidelines* rather than auditing *standards*. Different professional bodies have different terms for describing the authoritative auditing statements which they produce; Campbell (1985) does not let the diverse terminology distract his comparative study of the auditing guidance in nine countries. What is likely to be more important for the purposes of IFAC (and for that matter IASC) is that national pronouncements (whatever they may be called) carry authority and some means of enforcement at the national level.

Enforcing Compliance with International Standards

Both IFAC and IASC are effectively powerless to enforce compliance by their own member bodies. Both must rely on the moral obligation which membership of IFAC imposes. It should be noted that for the IASC this obligation has, in fact, been diluted over the years (Rivera, 1989, p. 326; Nobes, 1991, p. 77).

Recently, “In a very significant move, just after year-end the [IAPC] agreed that [international auditing] guidelines would be renamed ‘International Standards on

Auditing'. The committee felt that the term 'Standard' more appropriately describes IFAC's authority as an international standard-setting body and should improve the perception of users as to the status of the documents and encourage their wider use" (IFAC, 1991, p. 5). The move is "significant" for a number of reasons, not least because, under IFAC's own Constitution which can only be amended by the Assembly, the IAPC has no authority to issue *Standards*.

In countries where accounting and auditing practices are dictated by a governmental body, international pronouncements (whatever their designation) can be no more than persuasive at best. Dunn (1991) points to the fact that "the lack of a strong accountancy profession can make it difficult to exert influence in some countries. ... Any attempt to introduce new standards through the professional body would be hampered by [a] relative lack of influence" (p. 73). Fitzgerald (1981) calls for the IASC to obtain more authoritative support in such countries and to "broaden its base to encourage involvement of business, government, and other sectors in its work" (p. 26). This call has been heeded.

More generally, the lack of authority attaching to international pronouncements has caused several commentators to question the ability of the accounting profession to achieve harmonization unaided (Samuels and Piper, 1985, p. 87; McKinnon and Janell, 1983, p. 32; Nobes, 1991, p. 78).

Taylor (1987) uses the lack of enforcement powers as one indication that harmonization itself is not "adequate justification for the activities of the IASC" (p. 161). He advances an alternative rationale for efforts aimed at international harmonization, one premise of which is that the accounting profession is protecting its self-interest by taking action to pre-empt government intervention. Taylor specifies neither the source nor the form of this possible government intervention, though several supra-national governmental bodies have been involved in international accounting matters for several years. The United Nations (UN), through its Centre on Transnational Corporations, and the Organization for Economic Cooperation and Development (OECD) have been active, though relatively ineffective, in furthering the cause of international harmonization in financial reporting, (Fitzgerald, 1981). Both organizations are now represented on the Consultative Group of the IASC, on which wider interest groups other than accountants are represented. It would appear therefore that while both the UN and the OECD remain actively interested in international financial reporting, they are prepared to allow the IASC to lead the way.

The EC Commission is also represented on the IASC's Consultative Group but is certainly no passive bystander. The EC directives on company reporting are seen by some (e.g., Nobes, 1991, p. 89) as the most effective way of harmonizing accounting practices (in Europe, at least). Outside Europe, real progress towards international harmonization is most likely to occur through the IASC but only if it can obtain the necessary authority with which to ensure enforcement of its Standards.

Some outside agencies which have expressed an interest in *using* rather than *setting* international standards include the World Bank and the Regional Development Banks, for example the Asian Development Bank. These agencies have stipulated compliance with the international accounting and auditing pronouncements of IFAC and IASC as one of the conditions for the granting of financial aid for development

projects (a practice which Hove (1986, pp. 91–92) views as the best example of accounting imperialism).

Consistency of UK and International Auditing Guidance

Despite the lack of authority of international pronouncements, some countries do appear to honor their moral obligation to incorporate the international guidance into their national guidance. For example, the case of Australia is well documented (Campbell, 1985, pp. 34–36). In the United Kingdom, Chandler (1991) reports that “a great number of the basic principles and essential procedures contained in the IAGs/RSs are adequately covered by the existing UK guidance. Indeed the wording of some of the UK guidelines bears a very close resemblance to that of the IAGs. This is not surprising given the significant contribution of the UK bodies in the development of new IAGs (the United Kingdom has been represented on the IAPC since its inception) and the recognition given to existing IAGs when the APC is developing new UK guidance” (p. 8).

The major areas of difference appear to be those where the IAPC has recently moved ahead of the UK in developing guidance, for example on components of audit risk, the audit of accounting estimates, audit-related services, and the examination of prospective financial information.

A White Knight Appears on the Scene

The International Organization of Securities Commissions (IOSCO) is an affiliation of nearly 50 national securities regulators. One of its aims is to assist the continued growth of the international capital markets by seeking to reduce the diversity of securities regulations. It thus has expressed a legitimate interest in the harmonization efforts of the accounting profession.

IOSCO has encouraged IASC “to improve International Accounting Standards and to ensure that they are sufficiently detailed and complete, contain adequate disclosure requirements, and are prepared with the visible commitment to the needs of users of financial statements” (IFAC, 1990, p. 19).

To appease IOSCO both IASC and IFAC have been forced to reconsider their existing standards, in particular those which embody permitted alternatives. The IASC, in a major initiative, E32, proposed amendments to nearly half of the existing IASs in order to remove the “free choices of alternative accounting treatments for like transactions and events” (IASC, 1989, para. 1).

On auditing and ethical issues, IFAC reports that it “has stepped up its efforts to win [IOSCO’s] acceptance of IFAC auditing and ethics pronouncements for multi-national securities offering; the differences that existed have been minimized and both IFAC and IOSCO have an objective of a mutually acceptable set of standards, to be reached in October 1992” (IFAC, 1991, p. 1). Some significant revisions to the IAGs have been made since these discussions first took place. IFAC acknowledges

too that the ethics guidance had to be modified in response to IOSCO concerns (IFAC, 1991, p. 4).

The term “regulatory capture” has been used to describe the exertion of influence by one vested interest group over the activities of a governmental or quasi-governmental agency with regulatory powers (e.g., Walker, 1987). There is no evidence that regulatory capture has occurred at an international level, in fact almost the opposite is happening. IOSCO, with no regulatory powers over the accountancy profession, has “captured” the international standard-setting bodies (which have ineffective enforcement powers) and is essentially setting their policy direction.

IFAC and IASC clearly seem keen to explore the possibilities of close cooperation with IOSCO and have already expended significant amounts of resources (staff and committee time) to upgrading existing guidance so as to meet the IOSCO objections. The *quid pro quo* for this acquiescence from IFAC and IASC is the promise of high level recognition of their international pronouncements and the potential for enforcement of such pronouncements (albeit indirectly through the stock exchanges which are IOSCO members). Whether IOSCO have sufficient influence over *their* members to deliver on this promise remains uncertain. The most that IOSCO can do is to make recommendations to its members; like IFAC and IASC, it has no powers of enforcement.

Implications for Accountability and Standard Setting

Looking to the future, if the current cooperation between IFAC/IASC and IOSCO produces the hoped for results, a number of consequences, apart from increased harmonization, will follow. The fact that accounting and auditing standards would be set at international level and imposed on national accounting bodies would redirect criticism (e.g., in the UK, Sikka et al., 1989) of the accountability of the standard-setting process away from national standard-setters to those responsible for the international standards.

It would be difficult to defend the procedures currently used by IFAC and IASC against accusations of having unrepresentative and unelected committee memberships, of secrecy regarding committee agendas and voting patterns, and lack of public access to agenda material and (in the case of IFAC) responses to exposure drafts.

Conclusion

The advantage of the cooperation for IOSCO is that standards developed by the accounting profession are likely to be more acceptable to preparers and auditors of financial statements intended for multinational use than IOSCO-imposed standards (even if IOSCO were to have both the resources to develop and the powers to enforce such standards).

For IASC and especially IFAC, the recognition by IOSCO of their statements will enhance their standing in the world commercial, financial, and accounting circles.

Given the potential powers of IOSCO (via its members), this would also provide a means of ensuring compliance with international statements (initially, at least, in relation to multinational filings).

The down-side of this cooperation with IOSCO is the surrender of some autonomy over the setting of international standards and even over committee agendas and priorities. Other difficulties likely to be encountered are more strident calls for the process of international standard setting to be, and to be seen to be, more accountable.

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A Comparative Study of the Market for Audit Services in Hong Kong, Malaysia and Singapore

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Key words: Audit fees; Hong Kong; International auditing; Malaysia; Singapore

Abstract: *A large number of studies have been conducted on the market for audit services in developed countries but to date very few studies have focussed on less developed countries. This paper studies the audit services market in Hong Kong, Malaysia, and Singapore. The findings indicate broad similarities in the market for audit services in these three countries and those previously studied. However, there are some differences in the Malaysian market for audit services as compared to those in Hong Kong and Singapore. A central finding is that a large audit firm fee premium exists similar to that found in previous research in other countries for Hong Kong and Singapore, but not for Malaysia. This suggests that, as in most other countries which have been studied, there is a strong demand for quality-differentiated audits in Hong Kong and Singapore, but not in Malaysia. Some institutional and legal factors are suggested as possible explanations for this result.*

Introduction

This paper extends prior research into the market for audit services by providing a comparative study of three Asian countries. The market for audit services in these three countries – Hong Kong, Malaysia, and Singapore – is analyzed and compared with the markets of other countries previously studied. This follows the suggestion of Needles, who in a review of the state of the art of international auditing research,

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cited an article which compared audit pricing in Australia and the United States, and called for “(m)ore empirical research of this type” since it was “a study that transcended international borders and it stated and empirically tested generalizations.”¹ It is worthwhile to compare the market for audit services in these countries – Hong Kong, Singapore, and Malaysia – because the dynamic growth displayed by the economies of the Pacific Rim countries in recent years makes them a potentially important market for both domestic and international audit firms. Understanding the similarities and differences between these markets and those of more developed nations should increase our knowledge of the increasingly interdependent world economy as it relates to accounting. In particular we assess the extent to which the findings of studies of other countries apply to these emerging nations. First, we assess the degree of similarity of audit fee determinants between these three countries and other countries, and second, we examine the extent to which the large audit firm fee premium documented in other countries exists in the Far East.

The remainder of this paper proceeds as follows. In the next section the results of previous research on the market for audit services in other countries is briefly reviewed. This is followed by a section which briefly discusses the institutional background of accounting and auditing in Singapore, Malaysia, and Hong Kong. The next section describes the data and the empirical tests. Then the empirical results are presented. The results are discussed and summarized in the final section of the paper.

Previous Research

Beginning with the seminal work of Simunic,² a number of studies have analyzed the market for audit services in several countries. The vast majority of these studies have focussed on highly developed English-speaking countries. These countries include the United States, the United Kingdom, Australia, and New Zealand. To date only limited attention has been given to the market for audit services in less-developed, non-native English-speaking countries. Two exceptions to this general focus on highly developed countries are studies of Singapore³ and India.⁴

The major results of earlier studies have served to establish the responsiveness of audit fees to auditee size, audit risk, and audit complexity. In general, models have been developed which explain a large portion of audit fees based on proxies for these constructs.

An additional question which has generally been addressed in these studies is whether a subset of auditors receive premium fees due to their “brand name” or reputation for providing high quality audits. Usually these studies have explored whether there is an audit fee premium paid to “Tier I” auditors, with the term Tier I usually defined as consisting of the very largest international accounting firms; typically this group of firms has been viewed as being comprised of the so-called “Big Eight” (now the “Big Six”) firms. The importance of finding a Tier I audit fee premium is that it provides evidence of product differentiation in the market for audit services. That is, firms which have invested in reputation capital (e.g., employee training programs, firm publications, and advertising) are able to obtain a return on

this investment through higher prices for their services. To date a Tier I fee premium has been documented in the United States,⁵ the United Kingdom,⁶ Australia,⁷ and India.⁸ A study of New Zealand⁹ did not provide strong evidence of a Tier I audit fee premium. In the only previous study of audit fees in Singapore,¹⁰ this issue was not addressed. Thus, it is possible that the market for audit services may differ significantly across countries, with a Tier I audit fee premium characterizing only certain countries. That is, the degree of auditor product differentiation may vary significantly between countries.

Institutional Background

There are broad similarities in the accounting environment in Hong Kong, Malaysia, and Singapore. For example, in terms of accounting standards all three countries tend to follow financial reporting models similar to those of most current or former members of the British Commonwealth. All three countries are represented on the International Accounting Standards Committee. While the overall accounting orientation of the three countries is similar, Malaysia appears to be somewhat less structured in terms of the degree of regulation of financial accounting disclosure.¹¹

There are also broad similarities in the market for audit services in these three nations. For example, the six largest international firms are represented by offices in each country. There are, however, differences in the extent of this large firm representation. For example, the Tier I presence in Malaysia is less pronounced than in the two other countries when measured by the market share of the largest accounting firms. Size-adjusted market share of the Big Eight for publicly traded clients in 1987 was in excess of 90 percent in both Hong Kong and Singapore but was only 48 percent in Malaysia.¹²

Overall, the three countries are at least broadly similar in terms of the accounting environment. Some differences, however, in the legal environment exist in the case of Malaysia. For example, while Hong Kong and Singapore are relatively open markets with respect to ownership, Malaysian national economic policy restricts ownership such that native Malays must own at least 30 percent of corporation's equity. In addition, foreign ownership is limited to a maximum of 30 percent. Further, the market structure mandates certain procedures that make it virtually impossible for foreign investors to subscribe for new listings. These restrictions have resulted in fewer foreign investors in Malaysian companies than in Hong Kong or Singapore firms.¹³ The following sections of the paper will assess the extent to which there are similarities and differences in the market for audit services as reflected in the determinants of audit fees in the three countries.

Data and Methodology

The data consist of a random sample of firms in each of the three countries included in the study – Hong Kong, Malaysia, and Singapore. Data were collected from the

1987 and 1988 annual reports of sample firms. Since audit fees are required disclosure in financial statements in these three countries, it was not necessary to obtain audit fee data by means of questionnaires as has been necessary in studies of audit fee determinants in the United States. This is important not only because it facilitates data collection but also because it ensures greater data accuracy and eliminates potential problems caused by non-response bias that may exist when data collection depends on survey response.

The basic research approach relies upon simple regression models of audit fees similar to those used in most prior studies of audit fees.¹⁴ These models have consistently been found to explain a considerable proportion of the cross-sectional variation in audit fees in the United States, the United Kingdom, Australia, New Zealand, and India. This basic regression model therefore will serve as a useful benchmark for assessing the similarities and differences in the audit services market in these countries as compared to Singapore, Malaysia, and Hong Kong. A separate regression model will be estimated for each of the three countries.

The regression model is of the following form:

$$\text{LFEE} = b_1 + b_2 \text{LASS} + b_3 \text{INVREC} + b_4 \text{SUBSIDIARIES} \\ + b_5 \text{BIG8} + u$$

where LFEE = the natural logarithm of audit fees; LASS = the natural logarithm of the client's total assets; INVREC = the proportion of assets in inventory and receivables; SUBSIDIARIES = the natural logarithm of number of consolidated subsidiaries of the client; BIG8 = an indicator variable with a value of 1 if the audit was performed by one of the Big Eight firms; and u = a residual error term assumed to have the standard properties making ordinary least squares regression appropriate.

The natural logarithm of assets, LASS, is used to control for client size, since it is to be expected that audit fees will be higher for larger clients. Logarithmic transformations of audit fees and client assets are employed because previous research in this area¹⁵ indicates that this specification provides a good linear fit in which the assumptions of ordinary least squares regression are satisfied. INVREC is a proxy for audit complexity (i.e., it costs more to audit a given amount of inventory and receivables than to audit most other balance sheet and income statement items). SUBSIDIARIES is also a proxy for audit complexity since more complex firms with more locations to audit and more diverse operations should entail more effort on the part of the auditor and hence result in higher audit fees. Thus, these three auditee size and audit complexity variables are expected to be positively related to audit fees. The auditor identity variable, BIG8, is the variable of primary interest in these regression models. This variable assesses the extent, if any, of a large audit firm fee premium as an indication of the degree of product differentiation in each of these countries. Based upon the research findings for other countries, the coefficient on this variable is expected to be positive or at least non-negative; that is, while not all previous studies have found positive evidence of a large audit firm fee premium, no studies to date have found a fee discount on audits performed by large audit firms.

Table 1. Descriptive statistics for audit clients by country

Variable	Mean (standard deviation)		
	Hong Kong	Malaysia	Singapore
Audit fee ^a	1708 (2650)	114 (311)	168 (257)
Assets ^a	7095 (10864)	571 (2117)	795 (2663)
SUBSIDIARIES	24.2 (24.8)	12.6 (18.5)	14.0 (18.0)
INVREC	0.17 (0.17)	0.18 (0.17)	0.16 (0.41)
Percentage of sample audited by Big Eight firms	78%	68%	83%
N	99	132	126

^aAudit fees are expressed in thousands and assets are expressed in millions of the respective national currencies: the Hong Kong dollar, the Malaysian Ringgit, and the Singapore dollar.

Empirical Results

Table 1 presents descriptive statistics on the sample for each of the three countries. Those variables which are expressed in the national currencies of these nations (audit fees and assets) are included for descriptive purposes and obviously cannot be compared across countries. Of primary importance for the tests of product differentiation is that there is a reasonable number of both Big Eight and non-Big Eight clients in each of three samples, allowing for detection of a potential Big Eight fee premium if it exists.

Table 2 presents the results of the regression equations for each country. For each of the three country-specific regression models the overall results suggest a good linear fit in which a large proportion of the cross-sectional variation in audit fees is

Table 2. Results of audit fee regression models by country (dependent variable = natural logarithm of audit fee)

Explanatory Variable	Regression coefficients (t-statistics)		
	Hong Kong	Malaysia	Singapore
Intercept	2.54 (6.19)***	0.98 (3.35)***	1.32 (5.66) ***
LASS	0.37 (6.59)***	0.38 (6.51)***	0.30 (7.78)***
INVREC	1.94 (4.64)***	1.21 (2.78)***	0.86 (2.42) ***
SUBSIDIARIES	0.31 (4.44)***	0.37 (4.95)***	0.58 (10.55)***
BIG8	0.27 (1.83)*	0.07 (.46)	0.23 (1.57)*
N	99	132	126
Adjusted R ²	0.61	0.54	0.74

One-tailed significance levels for t-statistics on explanatory variables: * = 0.10, ** = 0.05, *** = 0.01

explained. The values of the F-statistics are significant at better than the 0.0001 level in all three countries. The values of adjusted R^2 range from 0.54 in Malaysia to 0.74 in Singapore, indicating that all three models explain more than half of the cross-sectional variation in audit fees. These values of the R^2 statistic are similar in magnitude to those found in studies of other countries.

An examination of the *t*-statistics for the explanatory variables also suggests considerable similarity between the determinants of audit fees in these three developing countries and in the more developed countries studied in previous research. The client size variable (LASS) is statistically significant at better than the 0.01 level for all three countries as are the audit complexity variables, SUBSIDIARIES and INVREC. Thus the results for the auditee size and audit complexity variables indicate that there is considerable similarity in the determinants of audit fees among these three countries and between this group of countries and the countries studied in previous research.

The results for the variable of primary interest, BIG8, which tests for product differentiation in the market for audit services, however, differs considerably among these three Asian nations. In Singapore this indicator variable has a value of 0.23 and is statistically significant at the 0.06 level. This translates into a Big Eight audit fee premium of approximately 26 percent, a level roughly comparable to that found in studies of the United States and several other countries.¹⁶ In the case of Hong Kong, the coefficient on the Big Eight indicator variable is 0.27 and is statistically significant at the 0.04 level. This translates into a fee premium of approximately 31 percent. For Malaysia, however, the coefficient on the Big Eight dummy variable is trivial in magnitude (0.07) and is far from being statistically significant at any conventional level. Thus, there is evidence of a Big Eight audit fee premium in only two of these three countries. Hong Kong and Singapore exhibit a large-accounting-firm fee premium similar to that found in most other countries while this fee premium is not found in the Malaysian audit services market.

Discussion and Summary

The results of this study indicate that the Tier I audit fee premium, found in other countries, exists in Singapore and Hong Kong but not in Malaysia. If the Tier I premium is attributable to quality-differentiated services as suggested by previous studies, then perhaps there is less demand for quality-differentiated audits in Malaysia. This reduced demand could stem from the fact that because of the national regulatory environment international investors are less involved in the market. Therefore, there may be less perceived need to have financial statements audited by firms with an international reputation.

In addition, many of the listed companies in Malaysia began as family owned firms, and, even after going public, many of them are still family controlled. In these cases there may be less demand for financial statements audited by firms with high reputations since the majority stockholders have other sources of information on the holdings and performance of the companies. Either of these reasons could

explain, at least in part, why there is no Tier I audit fee premium in Malaysia and why Tier I firms have a lower market share in Malaysia as compared to Hong Kong and Singapore.

This finding has important implications for an understanding of markets for audit services. Future research should focus on determining what factors cause increased value to be placed on audits by large, international accounting firms. This knowledge could lead to increased understanding of how audits affect the efficiency of securities markets and of the factors that enhance the value of audit services.

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The Classification of Leases by Lessees in the United States and the Netherlands: A Comparative Study

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Key words: Accounting standards; Comparability; Lease classification; The Netherlands; Reliability

Abstract: *The lease classification systems in the United States and the Netherlands are quite different. In the United States the classification of leases is done by testing the terms of the agreement according to four well-defined criteria. In the Netherlands, on the other hand, only a broad set of guidelines is given whereby each lease contract is judged on its own merits. In this paper, the Dutch and American lease classification systems are compared with the help of Statement of Financial Accounting Concepts No. 2, "Qualitative Characteristics of Accounting Information." In particular, the reliability and the comparability of the accounting information with respect to leases are emphasized. On the basis of this comparison, a so-called "rebuttable presumption of a capital lease" is offered for consideration.*

1. Introduction

The reporting of lease agreements in the annual reports of both the lessor and the lessee is determined by the nature of the agreement. Within this framework, one can differentiate between operating and capital leases

Capital leasing can be regarded as a mode of financing assets. For example, consider a lease agreement that is non-cancelable for a period which equals its estimated economic life. At the end of this period, the lessee becomes the owner of the underlying asset. In return for this the lessor receives payments which covers the total sum of the investment, the interest charged and a reasonable profit. Executory

costs such as servicing, cost of insurance and taxes are to be paid by the lessee. This case implies that the lessee is liable to changes in value of the leased asset. Therefore, the leased asset should be accounted for on the lessee's balance sheet as the acquisition of an asset and the incurrence of an obligation. The depreciation on the leased asset would be deducted in the income statement. Periodically, the sum for the repayment of debt is deducted from the amount accounted for the lease obligation on the balance sheet to determine its value. The interest payments are deducted on the income statement.

An operating lease is actually a kind of service accorded to the lessee by the lessor. For example, consider a lease contract that can be cancelled at any moment by the lessee. In addition, all executory costs are assumed by the lessor. At the time of termination or cancellation of the agreement, the leased asset must be returned to the lessor. The lease payments are set at a level to cover the estimated depreciation charge, a provision for interest and profit, and the executory costs. In this case, the leased asset is capitalized by the lessor, as the economic risk lies with him or her. The lessee, on the other hand, accounts for the lease payments as expense in his or her income statement.

The above examples of capital and operating leases are the two ends or extremes of a wide spectrum which incorporates many hybrid forms. It is not always easy to ascertain whether the lease under consideration is a capital or operating lease, because these hybrid forms are often a combination of both capital and operating leases. The classification of the lease contract could be of great importance to the lessee, as this could affect the decision to capitalize leases or not, thereby influencing the solvency and profitability of the company as presented on its balance sheet. Capitalization leads to lower solvency and profitability ratios in comparison with an off-balance sheet treatment. Lessees are generally of the view that the non-capitalization of leases does not affect their ability to raise capital as compared with capitalization.¹

The determination of the nature of a lease contract in the United States is made by testing the terms of the agreement according to four well-defined criteria stipulated by the Financial Accounting Standards Board (FASB). This is contrary to the approach which has been adopted in the Netherlands. As per the Dutch Annual Reporting Guidelines (*Richtlijnen voor de jaarverslaggeving*), the nature of a lease contract is deduced from the terms of the contract as a whole. No specific criteria have been established concerning the manner in which this should be done. In contrast to the lease classification system in the United States, the system in the Netherlands is similar to a black box. The Netherlands could open that black box through the adoption of a lease classification system as in the United States. In this paper, we discuss and draw comparisons between both systems of lease classification in considerable detail. On the basis of this comparative study, we suggest which system should be preferred in the Netherlands.

In section 2 of this paper we deal with the classification of lease agreements in the United States from the point of view of the lessee. Furthermore, in section 3 we discuss different amendments and interpretations of the US regulations concerning lease classification. Section 4 describes the situation as of today in the Netherlands. In section 5, both classification systems are compared. Finally, in section 6 it is suggested which system should be preferred in the Netherlands.

2. Classification of Leases in the United States

In the United States, FASB Statement No. 13, "Accounting for Leases", and its amendments and interpretations establish standards on the financial accounting and reporting for leases by lessees and lessors. Since the issuance of this statement in 1976, nine statements have been added to the list which contain amendments concerning SFAS 13, the last of them being SFAS 98, which became effective in mid-1988. Besides these nine statements, six interpretations have been issued by the FASB which clarify certain provisions of SFAS 13 in great detail.

The classification of lease contracts from the standpoint of the lessee is based on paragraph 7 in SFAS 13. A lease meeting one or more of the following criteria is to be classified as a capital lease by the lessee:

- (1) The lease transfers ownership of the property to the lessee by the end of the lease term.
- (2) The lease contains a bargain purchase option.
- (3) The lease term is equal to 75 percent or more of the estimated economic life of the leased property.
- (4) The present value at the beginning of the lease term of the minimum lease payments, excluding that portion of the payments representing executory costs such as insurance, maintenance, and taxes to be paid by the lessor, including any profit thereon, equals or exceeds 90 percent of the excess of the fair value of the leased property to the lessor at the inception of the lease over any related investment tax credit retained by the lessor and expected to be realized by him (the so-called 90 percent recovery test).

The last two criteria are not applicable when the beginning of the lease term falls within the last 25 percent period of the total estimated economic life of the leased property.

A lease which does not meet the above criteria is to be classified as an operating lease from the lessee's perspective. This means that the lessee need not capitalize the lease. But for operating leases having (remaining) non-cancelable lease terms in excess of one year, information of the future obligations must be disclosed in the lessee's financial statements.

Inconsistencies and differences of opinion with respect to lease classification played an important role in developing the criteria. This is recorded in paragraph 62 as follows: "The Board believes that this Statement removes most, if not all, of the conceptual differences in lease classification as between lessors and lessees and that it provides criteria for such classification that are more explicit and less susceptible to varied interpretation than those in previous literature."

Clearly, in the United States, the four above-mentioned criteria determine the nature of the lease from the point of view of the lessee. However, Coughlan² has demonstrated that a lease that meets criterion 1 or 2 must also meet the 90 percent recovery test (criterion 4). Further he showed that almost all leases meeting criterion 3 meet criterion 4. According to Coughlan, criteria 1, 2 and 3 are therefore redundant and should be eliminated *for the sake of simplicity*. The assumption that the 90

percent recovery test is sufficient to determine the nature of the lease contract would seem to be correct. However, as shown in the next section, this does not simplify matters concerning lease classification, as the 90 percent recovery test has its own drawbacks.

3. Amendments and Interpretations of SFAS 13

To determine whether the lease meets the 90 percent recovery test, the following variables play an important part:

- (1) the fair value of the leased property at the inception of the lease;
- (2) the minimum lease payments;
- (3) the lease term; and
- (4) the discount rate.

Since SFAS 13 became effective, the meaning of each of these variables has been changed or further clarified by amendments and interpretations. In this section we will discuss the three amendments, two interpretations and one exposure draft which have been issued by the FASB concerning the meaning of these variables. The other amendments and interpretations concern, among other things, lessor-accounting, sale-and-leaseback and subleasing. Therefore, we will not discuss these latter amendments and interpretations any further.

The Fair Value of the Leased Property at the Inception of the Lease

With respect to this variable, problems may arise when the leased property is part of a larger whole, for example, when an office or a floor of a building is leased. The fair value of the leased property is defined as the price for which the property could be sold in an arm's-length transaction between unrelated parties. If it is not possible to determine the fair value in this (objective) way, the lessee shall classify the lease according to the 75 percent criterion only using the estimated economic life of the building in which the leased premises are located. Because many lessees asserted that objective estimates of the leased property's fair value were not possible and the estimated economic life was determined in such a way that the 75 percent test was not met, the FASB issued Interpretation No. 24, "Leases Involving Only Part of a Building." It includes the provision that if there are no sales of property similar to the leased property, to estimate the leased property's fair value, other evidence may provide a basis for an objective determination of fair value, for example an independent appraisal of the leased property or estimated replacement cost information.

The Minimum Lease Payments

In addition to fixed rentals, many leases contain contingent rentals which depend on sales volume in the leased facility, an interest rate such as the prime rate, or an index such as a construction cost index. SFAS 13 provides that contingent rentals, from

the lessee's point of view, are to be charged to expense as incurred and not considered part of the minimum lease payments for the purpose of performing the 90 percent recovery test. However, in accounting practice diverse ways of determining contingent rentals had developed. As a consequence, similar leases were classified as a capital lease by one lessee and as an operating lease by another lessee. Consequently, the FASB issued SFAS 29, "Determining Contingent Rentals." It includes the provision that only amounts based on measurable factors existing at the inception of the lease should be considered part of the minimum lease payments. Thus lease payments that depend on a factor directly related to the future use of the leased property, such as machine hours of use during the lease term, are contingent rentals. On the contrary, lease payments based on an index or interest rate existing at the inception of the lease are part of the minimum lease payments. However, any increases or decreases in lease payments that result from subsequent changes in the index or rate are contingent rentals.

In performing the 90 percent recovery test, a lessee is required to include, in the determination of minimum lease payments, guarantees of the residual value of leased property at expiration of the lease. Interpretation No. 19, "Lessee Guarantee of the Residual Value of Leased Property", clarifies whether certain kinds of lease provisions constitute a guarantee by the lessee of the residual value.

The Lease Term

The classification of a lease is determined at its inception date. SFAS 13 provides that the inception date is the date of the lease agreement or commitment, if earlier. However, it mentioned one exception to this rule. If the property covered by the lease had yet to be constructed or had not been acquired by the lessor at that date, the inception of the lease should be the date that the construction of the property was completed or that the property was acquired by the lessor. But if the fair value of the leased asset increased during the construction period, it was possible that the present value of the minimum lease payments at the beginning of the lease term could be more than 90 percent of the estimated fair value of the leased asset at the earlier agreement date but less than 90 percent of the fair value of the leased asset at the later date on which construction was completed. Thus, the application of the 90 percent recovery criterion at the date of completion of construction could lead to the classification of a capital lease as an operating lease. To avoid this result, the FASB amended SFAS 13. According to SFAS 23, "Inception of the Lease", the classification of a lease should *always* be determined at the date of agreement or commitment, if earlier.

In SFAS 98, "Definition of the Lease Term",³ the FASB further elaborated the definition of the lease term because of the diversity of interpretations of the definition used in accounting practice.

The Discount Rate

For the computation of the present value of the minimum lease payments the next two discount rates are distinguished:

- (1) the lessee's incremental borrowing rate: the rate that, at the inception of the lease, the lessee would have incurred to borrow over a similar term the funds necessary to purchase the leased asset;
- (2) the interest rate implicit in the lease: the discount rate that, when applied to the minimum lease payments, excluding that portion of the payments representing executory costs to be paid by the lessor, together with any profit thereon, and the unguaranteed residual value accruing to the benefit of the lessor, causes the aggregate present value at the beginning of the lease term to be equal to the fair value of the leased property to the lessor at the inception of the lease, minus any investment tax credit retained by the lessor and expected to be realized by him.

The lessee must apply the lower of the two rates. In case the lessee is not able to determine the implicit interest rate of the lease, then SFAS 13 states that the incremental borrowing rate should be applied. As early as 1978, the FASB issued an exposure draft called "Lessee's Use of the Interest Rate Implicit in the Lease" to counter the misappropriate use of the discount rate as a means to influence the classification of leases. The exposure draft states that the lessee should use an *estimate* of the interest rate implicit in the lease if the implicit rate computed by the lessor cannot be ascertained and classification as a capital lease does not result through the application of the criteria 1, 2 or 3 or through the use of the lessee's incremental borrowing rate. But up till now the exposure draft has not been translated into a statement.

As shown in this section, problems arising in accounting practice have led to adjustments of the criteria for the classification of leases by lessees. This process of adjustment can be visualized as represented in Fig. 1.

The cause of the continuing adjustments is the use of arbitrary criteria (especially the 90 percent recovery test) which contain subjective elements such as the economic life of the leased asset, the fair value of the leased asset at the inception of the lease,

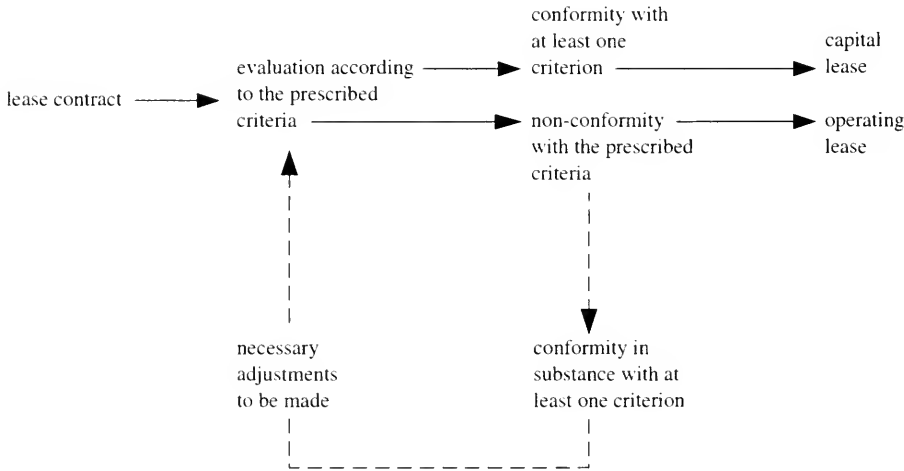


Fig. 1. Evaluation of the terms of the lease contract as per the prescribed criteria. (The dotted lines indicate the way in which the adjustments of the criteria take place.)

the minimum lease payments, the lease term, and the discount rate in a situation where the lessee is not indifferent to the way leases are classified. In that case, the subjective elements can be manipulated by the lessee in order to influence the lease classification. The conclusion drawn by Dieter⁴ puts the above-mentioned dilemma into perspective when he states: "While arbitrary rules may work when the objectives are at the extremes of available options, they rarely work if the position sought is on middle ground."

4. Classification of Leases in the Netherlands

In the Netherlands, the Civil Code contains most of the legal framework for financial reporting by companies.⁵ The most important section of the Act is section 362.1. It states among other things: "The annual accounts shall, in accordance with accounting principles acceptable in the social and economic environment, furnish such insight as to enable a sound judgment to be formed regarding the financial position and results of the legal entity and – to the extent that the nature of annual accounts so permits – regarding its solvency and liquidity." The rules of the Act are often vague. Concerning lease classification there are no specific rules. The words "lease" or "leasing" are not even mentioned in the Act. But it is evident from the explanatory memorandum to section 366 of the Act, that property should not be capitalized by the company that is the legal owner but instead by the company that bears the economic risks.

In the Netherlands, the sections of the Act are interpreted by the Council for Annual Reporting (*Raad voor de Jaarverslaggeving*). The Council is comprised of representatives of Dutch employers' organizations, users of financial statements and the Netherlands Institute of Registered Auditors (*Nederlands Instituut van Registeraccountants, or NIVRA*). It reviews the accounting principles adopted by companies, and decides on the acceptability of these practices within the framework of the Act. It should be noted, however, that the Annual Reporting Guidelines (*Richtlijnen voor de jaarverslaggeving*) determined by the Council are intended to have an impact on accounting practice. It is neither mandatory for companies to follow these guidelines nor obligatory for auditors to qualify their reports if the guidelines are not followed. The guidelines of the Council can best be described as authoritative opinions of an influential private group.

With respect to leasing Guideline 1.05, "Criteria for the inclusion and disclosure of information", paragraphs 121 to 127 are of importance. Paragraph 121 states that a distinction is made between capital leases and operating leases. A capital lease is described as, in essence, a form of finance, in which the legal ownership of the assets generally remains with the lessor, the economic risks being borne entirely or almost entirely by the lessee (paragraph 122). In the case of an operating lease, the lessee benefits from the use of an asset but the economic risks remain entirely or almost entirely with the lessor. The lessor usually takes care of the maintenance of the leased asset and also arranges for its replacement in the event of temporary failure (paragraph 123).

Concerning the classification of lease agreements, paragraph 124 states that the nature of any specific contract will have to be deduced from the terms of the contract as a whole. If it is evident from the terms of the contract as such that the contract involves a capital lease, the leased asset should be capitalized by the lessee. In the balance sheet of the lessee or in the notes, it should be mentioned that the lessee is the economic but not the legal owner of the leased asset (paragraph 125). Further, this paragraph mentions three examples of the terms of a contract whereby in principle the economic ownership rests with the lessee:

- (1) The lessee is entitled to purchase the asset at a price which is substantially below its market value during or immediately after the period of expiration of the lease contract.
- (2) The lessee has committed itself for a period of approximately the same duration as the economic life of the asset.
- (3) The lessee has committed itself for a shorter period than the economic life of the asset but in addition has been given an option to lease the asset at a considerably lower rental for the ensuing period up to approximately the end of the economic life of the asset.

The examples cannot be compared to the criteria for classification of leases as used in the United States because contracts that do not include one of the examples could nonetheless also be classified as a capital lease. That is to say, that the examples are not the only prerequisites for classification of leases into capital leases. Paragraph 126 pertains to operating leases. This paragraph mentions that an operating lease can never give rise to the leased property being capitalized by the lessee. But where the lessee has entered into commitments involving substantial sums of money for rather long periods, this fact should be disclosed in the notes. This paragraph is a result of section 381 of the Act. This section states that important off-balance sheet liabilities should be disclosed in the notes.

As mentioned above, the company that bears the economic risks is the economic owner of the leased asset. The guidelines do not state any quantifiable criteria for assessing which party in the lease agreement mainly bears the burden of the economic risks. In the Netherlands, each contract has to be judged on its own merits. Paragraph 125 gives only three examples of situations whereby the economic risks rest mainly with the lessee. The Dutch lease classification system may be visualized as shown in Fig. 2.

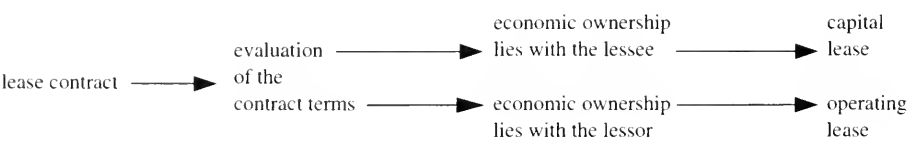


Fig. 2. Evaluation of the terms of the lease contract as a whole

5. Comparison of the Classification Systems

Both in the United States and in the Netherlands, lease classification clearly has its roots in economic theory. Stated differently, the criterion for the capitalization of leases, in the United States and the Netherlands is the economic ownership of the leased asset. The Netherlands has a broad set of guidelines whereby each lease contract is judged on its own merits. On the other hand, in the United States the classification of leases is achieved by applying strict rules that have been given by the FASB. This implies that every lease contract has to be examined in the light of the four criteria.

The objective of accounting rules is the adequate reporting of the financial position and the results of operations of an entity. The question that we must ask ourselves is to what extent accounting rules, whether they are broadly formulated or detailed, determine the quality of financial reporting.

The FASB, in its Statement of Financial Accounting Concepts No. 2 (SFAC 2), summarizes a number of qualitative characteristics that should apply to accounting information. The overriding criterion that was applied by the FASB, when formulating the qualitative characteristics of the accounting information, was its usefulness to users such as shareholders, bankers and financial analysts. The qualitative characteristics are as follows:

- (1) understandability;
- (2) relevance;
- (3) reliability; and
- (4) comparability.

Before applying these qualitative characteristics, the accounting information must pass two litmus tests: it should satisfy a materiality threshold, and the benefits of the accounting information should exceed its costs. The above-mentioned qualitative characteristics can be interpreted in varying degrees depending on the context in which they are used, since clear-cut definitions that apply to all situations do not exist.

Understandability and relevance of accounting information can be eliminated as qualitative characteristics in the case of lease classification, as the latter does not influence them. This is in contrast to the two other qualitative characteristics, namely reliability and comparability of accounting information. The FASB distinguishes three elements of reliability, as follows:

- (1) verifiability;
- (2) neutrality; and
- (3) representational faithfulness.

In accounting practice it is difficult to apply these elements strictly, as there is a certain level of interaction between them. The three elements can be related to the classification of leases as follows:

- (1) Verifiability in the context of lease classification means that, when using the same information and measurement standards, different parties should arrive at the same classification of the lease contract.
- (2) Neutrality suggests that the system of lease classification should not be used as an instrument in the service of any vested or particular interests.
- (3) Representational faithfulness implies that the way leases are classified should present a clear picture, i.e. the information provided on leases should agree with what it is meant to represent. Stated differently, substance should always be preferred over form.

Comparability applied in this context means that the reporting of lease contracts in financial statements of companies should be of such a nature that one is able to compare the lease activities of different companies with each other. Since the nature of the lease contract determines the manner by which it is accounted for in financial statements, comparability is influenced by the system of lease classification.

In general, unambiguous and flexible rules enhance the reliability and comparability of information. But on the whole this is largely a difficult task, as one possible attribute often rules out the other. One can see this happening both in the United States and the Netherlands.

The Dutch accounting rules are flexible; hence there is no necessity to resort to creative accounting such as presenting capital leases as operating leases since the distinction between the two types of leases is drawn on a case-by-case basis. This leads to the situation that it is very often not possible to classify lease contracts unambiguously, the reason being that differences in interpretation or judgment lead to different classifications of similar lease contracts. This can result not only in a loss of comparability between companies but it can also affect the verifiability and neutrality adversely. An example of this ambiguity is that a difference of opinion could arise between the management of the company and the external auditor with respect to the classification of a certain lease contract. This could lead to a situation whereby the external auditor might, for commercial reasons, agree in principle to an incorrect lease classification adopted by the company to satisfy the management. Thus the lease classification becomes an instrument in the hands of the management for the purposes of manipulation to achieve desired results. As observed earlier, non-capitalization of leases leads to a better presentation of solvency and profitability of the company.

The process by which leases are classified in the Netherlands appears like a black box. On the other hand, stringent accounting rules have been laid down in the United States to classify leases in a rather unambiguous manner. This enhances the comparability and the verifiability/neutrality of the accounting information concerning leases. In contrast to the Council for Annual Reporting, the FASB determines whether substantially all the benefits and risks of ownership have been transferred to the lessee. As we have seen earlier, this does not lead to *complete* unambiguity because the evaluation criteria are both incomplete and subject to various interpretations (see SFAS 98 and Interpretation No. 19). In comparison to those in the Netherlands, the American accounting rules are *relatively* unambiguous and rather inflexible.

The result is that lessees try to circumvent these criteria to prevent the capitalization of leases. This makes it necessary to redefine the underlying variables of the 90 percent recovery test constantly (see SFAS 23, SFAS 29, Interpretation No. 24 and the above-mentioned exposure draft). This inflexibility endangers the important accounting principle of substance over form. Such is not the case in the Netherlands, where formal evaluation criteria for the classification of leases are non-existent.

We could conclude from the foregoing discussion that comparability between the lease activities of different companies is much greater in the United States than in the Netherlands. However, one should also consider that a lack of representational faithfulness can affect the comparability of the information concerning leases adversely. The reliability of the information as a whole is endangered by both countries' systems of classification as the elements of verifiability and neutrality are threatened according to the Dutch system, while representational faithfulness suffers in the American system. The preceding can be summarized as shown in Table 1.

Table 1. An overview

Qualitative characteristics	The US system	The Dutch system
Reliability:		
Verifiability	+	-
Neutrality	+	-
Representational faithfulness	-	+
Comparability	+/-	-

+: better than in the other country; -: worse than in the other country.

6. A “Rebuttable Presumption of a Capital Lease”

The question yet to be answered is: should the Netherlands adopt a system of accounting rules concerning lease classification as in the United States? In our opinion, it should not, despite the two plus signs and one plus/minus sign for the American system against only one plus sign for the Dutch system (see Table 1). A broad set of guidelines underlying the system of lease classification should be preferred because it offers a great amount of flexibility. In general, rules should account for all possible situations, thereby enhancing the principle of substance over form. As seen above, amendments have not been necessary because of the fact that arbitrary classification criteria are used, but are instead the result of the use of ambiguous variables that underlie these classification criteria. Therefore, as long as it is impossible to define these variables unambiguously, our preference in principle lies with a system of lease classification as in the Netherlands. Furthermore, we consider the time and energy spent in amending and applying a still more complex set of rules and regulations as a waste of resources that occurs as a direct result of the inflexibility incorporated within the American system.

This, however, does not imply that the Dutch system of lease classification is perfect. According to us, there is still room for improvement, especially in the field

of additional information furnished by the company in the notes to their financial statements. More attention should be given to this aspect because of the general character of the guidelines concerning lease classification which could affect the verifiability and neutrality of the information presented about leases, for example, making it compulsory for lessees to state the reasons why leases have not been capitalized in the financial statements. Stated differently, there should be a "rebuttable presumption of a capital lease." Under this approach, all leases should be assumed to be capital leases unless there are specific reasons to assume the contrary. Considering the fact that the lessee in general does not wish to capitalize leases, a "rebuttable presumption of a capital lease" would be superior to a "rebuttable presumption of an operating lease." When a lease is treated as operating in the lessee's financial statements, the justification should be stated explicitly in the footnotes. This would improve the insight into the process whereby lease classification takes place in the Netherlands, thereby to a certain extent getting rid of its black box character. This system has some clear-cut advantages. First, it enhances neutrality as it makes it more difficult for the company to use the lease classification system as an instrument to manipulate and therefore to achieve certain desired outcomes. Second, the possibility that the external auditor could be placed in a rather ambivalent position would be greatly reduced, thus improving the verifiability of the lease classification. Third, this would provide greater insight into the manner by which leases are classified, thereby enhancing the comparability of lease activities between companies. However, it should be noted that one should not lose sight of the element of materiality during this process. A description of the manner in which lease contracts are classified by the lessee could lead to a certain amount of self regulation by which accounting standards develop in congruence with the "accounting principles acceptable in the social and economic environment." This is in contrast to the situation currently prevalent in the United States where amendments lag behind the developments that have taken place within the accounting practice.

Our choice for a revised Dutch system is more than a choice between Scylla and Charybdis. We have to admit that our choice has a so-called cultural background too. In the Netherlands, the *insight* into the financial position and results of a certain company provided by its financial statements plays an important role, whereas in the United States the *comparability* between companies is of importance. When reviewing one's own system, an author should evaluate the systems of others. Unfortunately, the American system does not contribute to a better insight into the financial position and results of a company. That insight is considered to be more important in the Netherlands than comparability is evident from the comments of the Council for Annual Reporting⁶ on exposure draft 32 of the International Accounting Standards Committee: "E 32 is aimed at comparability. However, the primary requisite is the good insight which annual accounts ought to give into the financial position and results of the enterprise concerned. Comparability of annual accounts of different enterprises is in principle not an aim in itself ... The objective of comparability may come into conflict with the objective of a good insight into a reporting enterprise. In the cases where the two objectives lead to different bases to be applied for the valuation of assets and liabilities and the determination of income, according to the views held in the Netherlands the choice should be made for the basis which in the

first place best meets the objective of good insight, even if the requirement of comparability is thereby not primarily fulfilled."

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Notes

1. Abdel-khalik et al. (1981) found that a majority of companies surveyed were structuring the terms of lease contracts to avoid capitalization. During the course of that study, bankers were asked to give their opinion concerning two identical companies. The researchers showed them condensed financial statements of two identical companies, differing only in their method of accounting for leases. Almost 40 percent of the bankers considered the company that did not capitalize its leases more profitable, and about 50 percent considered the two companies equal. More than 25 percent of the bankers indicated that the company that kept leases off the balance sheet had a better debt-paying ability. But a comparable study done by Wilkins and Zimmer (1983) concluded that bankers could not be misled by the manner in which capital leases were accounted for in the financial statements of the lessee. According to them, the reasons why bankers were not misled was the fact that explicit guidelines for the treatment of capital leases were used to analyze the loan applicants' financial statements, as well as the attention given to lease accounting alternatives and lease financing in the professional and internal bank literature.
2. J.W. Coughlan, "Regulation, rents and residuals; The FASB statement on leases is unnecessarily complex and has several major flaws as well." *The Journal of Accountancy* (February 1980), 58–66.
3. The complete title of SFAS 98 is: "Accounting for Leases: Sale-Leaseback Transactions Involving Real Estate, Sales-Type Leases of Real Estate, Definition of the Lease Term, Initial Direct Costs of Direct Financing Leases."
4. R. Dieter, "Is Lessee Accounting Working?" *The CPA Journal* (August 1979), 13–19.
5. From now on, we shall refer to the part of the Civil Code which deals with financial reporting by companies as "the Act."
6. Raad voor de Jaarverslaggeving, "Commentaar op ED 32 "Comparability of Financial Statements"." *De Accountant* (October 1989), 71–73.

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Accounting for Leases by Lessees in India: Some Evidence of Economic Impact

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Key words: Economic impact; India; Lease capitalization; Lessee accounting; Off-balance sheet financing; Positive accounting theory

Abstract: *Lease accounting has acquired considerable significance in India following the rapid growth of leasing in the 1980s. Accounting regulators are examining various alternatives for reporting leases. The lessees are concerned with the economic impact of capitalizing leases instead of disclosing them in footnotes. This paper investigates, in a positive-theoretic framework, whether firms with high/low leverage/profitability are significantly influenced by the off-balance sheet financing nature of leasing in deciding to lease, and, if so, whether they would prefer to purchase assets if leases were to be capitalized. The results indicate that capitalization may have a non-trivial impact on the leasing decision.*

Introduction

This paper was motivated by the recent move of The Institute of Chartered Accountants of India (ICAI) to require certain disclosures of leased assets and related obligations.¹ Lessees have been advised to make footnote disclosures of leases under the ICAI's proposal. A comprehensive standard on lease accounting is expected to be issued later by ICAI. The final accounting standard will probably require lease capitalization as stated in IAS 17 *Accounting for Leases*, as the ICAI is committed to the implementation of standards issued by the International Accounting Standards Committee. This paper presents some evidence of the economic impact of a lease capitalization requirement by investigating the association between the financial characteristics of lessees and their probable responses if leases were to be capitalized. Research in accounting has focused mainly on developed countries such as the United States, the United Kingdom, Canada and Australia. This paper attempts to explore accounting in India, a rapidly industrializing country with an established accounting profession.

a comprehensive legal framework for corporate reporting, and many active stock exchanges. The investigation is based on published accounting data and responses of corporate accounting managers to a questionnaire survey.

The experience of the Financial Accounting Standards Board (USA) shows that attempts to bring more leases on to the balance sheet have been somewhat thwarted by lessees with their creative responses designed to circumvent the capitalization of leases. Lessees have responded by rewriting finance leases into operating leases, substituting debt for lease finance, and issuing additional equity. These responses are apparently aimed at preserving the financial standing of a company as expressed in accounting ratios, such as the debt–equity ratio and the rate of return on assets. Positive accounting research hypothesizes that the corporate management’s choice of accounting methods is determined by firm size, leverage, and the existence of accounting-based bonus plans.² This paper investigates the leverage and profitability considerations that motivate firms’ preference for off-balance sheet financing and the impact of a lease capitalization requirement on firms’ financing decisions.

Section 2 examines these questions further. Section 3 describes the methodology adopted in the study. Section 4 discusses the results of the study. Section 5 contains a summary and the main conclusions of the paper.

1. Prior Studies and Development of Hypotheses

Financial Characteristics and Off-Balance Sheet Financing

Smith and Warner³ state that debt agreements often contain covenants that restrict dividend payments, contracting of additional debt, production and investment activities, and payout options. Often, these covenant restrictions are stated in terms of accounting data generated by applying “generally accepted accounting principles.” Standard forms of lending agreements used by leading financial institutions in India contain restrictive covenants on dividend payment, debt–equity ratio, additional borrowing and asset coverage. The relevant financial statement variables are not defined in the agreements. Kalay⁴ states that since firms with higher debt–equity ratios are more likely to violate the covenant restrictions, such firms have incentives to adopt accounting methods that mitigate the restrictions. Even if companies do not violate existing covenants, higher debt–equity ratios may cause additional borrowing to be more difficult as well as to increase the cost of borrowing. Nevertheless, potential covenant violations have tended to influence lessees’ opposition to lease capitalization.⁵ El-Gazzar et al.⁶ conclude that as firms approach debt covenant restraints as measured by variations of the debt–equity ratio, lessees would choose the operating method, i.e. non-capitalization of leases. Similar arguments can be applied to profitability ratios. Besides, capitalization of leased assets will increase the balance sheet value of fixed assets, resulting in a decrease in the rate of return on assets. Therefore, it can be speculated that there is likely to be a significant association between a firm’s leverage and profitability and its decision to avail of off-balance sheet financing by leasing assets. The following hypotheses emerge in their null form from the foregoing discussion:

H1: There is no relationship between leverage and the influence of off-balance sheet financing nature of leasing in the leasing decision.

H2: There is no relationship between profitability and the influence of off-balance sheet financing nature of leasing in the leasing decision.

The alternative hypothesis is that leverage/profitability is positively/negatively correlated with the influence of the off-balance sheet financing nature of leasing in the leasing decision.

Leverage and the Impact of Capitalization on the Lease–Purchase Decision

Myers et al.⁷ argue that lease and debt are regarded as equivalent by a number of parties and thus the “lease versus borrow” problem should be a 50/50 choice in efficient capital markets, apart from tax considerations. Bowman⁸ and Bayless and Dlitz⁹ are examples of empirical studies that support the lease–debt equivalence view. Nevertheless, lease activity has been on the increase in India as elsewhere and it is not clear why firms seem to prefer leases to debt. Preference for leasing is all the more puzzling because Sorensen and Johnson¹⁰ and Crawford et al.¹¹ claim that the yields on lease contracts are significantly higher than the costs of debt financing. The benefits of off-balance sheet financing may, in part, explain why firms pay a premium for lease financing compared to secured debt. These benefits include avoiding violations of covenant restrictions and being able to borrow on more favourable terms. If the capitalization of leases is mandated, these benefits will vanish and also the incentive to prefer leasing to debt. The degree of leverage can be a proxy for the extent to which a company is closer to debt covenant restraints and the level of difficulty as well as the cost of additional borrowing. Thus, it is reasonable to expect that the form in which lease information is disclosed has a greater effect on lease–purchase decision making in companies that are highly geared. The null hypothesis can be stated as follows:

H3: There is no relationship between leverage and the decision to purchase instead of lease assets.

The alternative hypothesis is that there is a positive correlation between leverage and the decision to purchase instead of lease assets.

2. Methodology and Sample

A mail questionnaire was developed to ascertain the views of managers on the lease capitalization versus footnote disclosure and allied issues. The research instrument contained a number of questions indicating the possible positions respondents can take with respect to reasons for leasing, alternatives in lease reporting, and likely managerial and financial-statement user impact of lease capitalization. Respondents were requested to indicate the extent of their agreement or support on a five-point scale with extremes “strongly agree” and “strongly disagree”. The instrument was

based on Abdel-khalik et al.¹² and Taylor and Turley.¹³ Three sets of the questionnaire with different sequences of the questions were used to eliminate any remaining bias in the instrument.

The questionnaire was sent to the largest 251 companies in the private sector in India. The list of these companies for 1987 was taken from *The Economic Times*, India's leading economic daily. All these companies were listed on a major stock exchange in India. The questionnaire was sent to all these companies as no information on leases was available from their published reports. A resumé of ICAI's proposed reporting requirements was given with the questionnaire. Respondents were promised a copy of the summary of the research results. Subsequent contact with many respondents indicated that they considered the promise a significant incentive for them to complete the questionnaire.

The independent variables, leverage and profitability, were defined as follows:

For leverage,

$$\text{Debt-equity ratio} = \frac{\text{Debentures} + \text{Other long-term liabilities}}{\text{Share capital} + \text{Reserves}}$$

For profitability,

$$\text{Return on assets} = \frac{\text{Profit before interest and tax}}{\text{Shareholders' funds} + \text{Long-term debt}}$$

These ratios were computed using data from the published financial statements for 1987.

Table 1.

A. Analysis of responses to questionnaire		
Questionnaires mailed		251
Questionnaires received after completion		113
Questionnaires not received:		
a. No leased assets in use	23	
b. Too busy to complete the questionnaire	7	
c. Reasons not known	108	138
		251
Questionnaires not fully completed (unusable responses)		5
Questionnaires fully completed (usable responses)		108
Percentage of usable responses to questionnaires despatched		43
B. Respondent companies' characteristics		
	Number	Percent
Companies with finance leases only	58	53.70
Companies with operating and finance leases	8	7.41
Companies with operating leases only	12	11.11
Companies with no leases	30	27.78
	108	100.00

The dependency between the decision to lease assets (the dependent variable) and leverage and profitability (the independent variables) was tested using the one-tailed non-parametric Spearman rank-order correlation. Parametric methods of testing dependency, such as regression analysis, are not appropriate since the responses were not normally distributed variables. A disadvantage of this test is that its ability to reject the null hypothesis is lower relative to parametric tests.

A total response rate of 43% was obtained with 108 usable replies (see Table 1). Non-response bias seemed unlikely from the comparison of early and late responses. Over 80% of the responding managers were at the level of head or deputy head of the finance and accounting function. None of the respondent companies with leases disclosed any information on leases.

4. Empirical Results

Hypothesis (H1)

Hypothesis 1 states in its alternative form that companies that have higher debt–equity ratios are more influenced by the benefits of off-balance sheet financing supposedly associated with leasing. Table 2 presents the results. The results in Table 2 indicate a positive correlation between debt status and the decision to lease assets, as hypothesized. The Spearman correlation of 0.263 suggests some measure of association between the two variables.

Table 2.

Debt status and the leasing decision		
Questionnaire item: Reason for leasing	Financial indicator: Debt–equity ratio	
Leasing does not affect balance sheet gearing as lease obligations do not appear in the balance sheet	Non-parametric Spearman rank-correlation coefficient	0.263*
	N = 66	

*Statistically significant at $p < .01$.

Hypothesis 2 (H2)

Hypothesis 2 states that companies that have lower rates of profitability will be more influenced by the off-balance sheet financing benefits of leasing. Table 3 presents the results of the study. The results in Table 3 indicate a negative correlation between the level of profitability and the decision to lease assets, as hypothesized. The Spearman correlation of –0.216 suggests a non-trivial association between the two variables.

Table 3.

Profitability and the leasing decision		
Questionnaire item: Reason for leasing		Financial indicator: Return on assets
Leasing facilitates showing higher return as leased assets do not appear in the balance sheet	Non-parametric Spearman rank-correlation coefficient <i>N</i> = 66	-0.216*

*Statistically significant at *p* < .05.

Hypothesis 3 (H3)

Hypothesis 3 states that companies with higher debt–equity ratios will purchase rather than lease assets if capitalization is required. Table 4 presents the results of the study. The results in Table 4 indicate a positive correlation between debt status and the decision to purchase assets rather than lease them, as hypothesised. The Spearman correlation of 0.324 suggests a significant association between the two variables.

Table 4.

Debt status and the impact of capitalization on the leasing decision		
Questionnaire item: Likely reaction		Financial indicator: Debt–equity ratio
If lease capitalization were required new assets would be purchased rather than leased	Non-parametric Spearman rank-correlation coefficient <i>N</i> = 66	0.324*

*Statistically significant at *p* < .005

5. Summary and Conclusions

The two principal objectives of the study are to investigate whether:

- (1) there is any relationship between company characteristics (debt status and profitability) and the influence of the benefits of off-balance sheet financing in lease–buy decisions; and
- (2) the imposition of lease capitalization will have some economic consequences for lessees.

The empirical data indicate that in India companies having high debt–equity ratios and low rates of profitability are significantly influenced by the off-balance sheet financing benefits that leasing offers at present. Further, companies with high debt–equity ratios are likely to purchase rather than lease assets, if lease capitalization is imposed.

The results are consistent with the contracting hypothesis (see Watts and Zimmerman² for a discussion of this hypothesis). The contracting hypothesis suggests that companies with higher debt-equity ratios adopt accounting procedures that shift reported earnings from future periods to the current period. The operating method of lease accounting which shows higher earnings and lower balance-sheet debt would be preferred by such companies. The results support the contracting hypothesis. Further, it seems that lease capitalization may affect firms' financing decisions as lessees may choose to purchase rather than lease assets. The fortunes of the leasing industry in India may, at least partly, depend on ICAI's stand on lease capitalization.

Several possibilities exist to extend the present study. First, it would be useful to determine whether and to what extent the managers' responses reflect probable reactions of financial statement users. This will provide evidence of "information inductance" in India. Second, other possible economic consequences of lease capitalization and their significance to managers could be investigated. Third, the use of "tailored" accounting principles in debt contracts to adjust for items not currently required to be reported under "generally accepted accounting principles" could be studied. Finally, the actual responses of managers to the lease accounting standard can be compared with their probable responses after the standard becomes effective.

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When Inflation is not High Enough: Disappearance of Real Assets Under FAS 52

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Key words: FAS 52; Inflation; Foreign direct investment; Latin America; Purchasing power; Parity; Functional currency

Abstract: *This study of United States foreign direct investment in high (10 to 25 percent) and “hyper”-inflation (over 25 percent) countries reveals a significant distortion in reported asset values under FAS 52. When inflation in a country is high, but not high enough for reversion to temporal translation procedures, exchange rate declines via purchasing power parity result in lower reported asset values than would be the case if inflation reached the hyperinflation level. Data show consistent decreases of United States direct foreign investment in high inflation countries, and increases in hyperinflation countries.*

Introduction

FAS 52 requires that the balance sheets of units of US multinational corporations located in hyperinflationary countries be translated by the temporal method. With historical cost valuation of real assets, the use of historical exchange rates is the only way to prevent purchasing power parity exchange rate adjustments from causing the dollar book value of these assets virtually to disappear. Similar protection is not allowed for units in countries with high, but not “hyper” inflation, even though the same erosion in asset value occurs at a more modest rate. This paper will show that even more modest rates of erosion can result in a significant distortion of reported asset values of units of US multinational corporations in high-inflation countries. *Survey of Current Business* data on total direct investment abroad, which is based on FAS 52 translated dollar values, suggest a nonsense preference of firms for investment in hyperinflation countries relative to high (but less than “hyper”) inflation countries.

Potential problems of FAS 52 in this area were noted by Selling and Sorter,¹ who observed in 1983 that

“...local-currency denominated historical cost multiplied by the current exchange rate (per Statement No. 52) yields a number that defies interpretation.”

More explicitly, Ruland and Doupnik² have suggested:

“If PPP holds, an appropriate translation method will reflect no risk exposure for foreign nonmonetary assets. The temporal method accomplishes this objective.”

Dollar and Local Functional Currencies

FAS 52 requires the temporal translation procedure, with reporting of gains and losses to income, for units of companies that have determined, on the basis of a number of aspects of integration of the unit with both world markets and the parent company, that the dollar is their functional currency. Subsidiaries operated largely autonomously in foreign countries are considered to have the local currency as the functional currency, and their financial statements are translated by the current-rate method, with gains and losses reported to an equity-adjustment account.

The six economic indicators of functional currency determination suggested by tile FASB³ – cash flow, sales prices, sales market, expenses, financing, and inter-company transactions – do not include the inflation rate. Only if the inflation rate exceeds 100 percent over three years is the use of temporal translation required, as if the functional currency of the units were the dollar.

High- and Hyper-Inflation Countries

Inflation rates (CPI) of IMF member nations were taken from *International Financial Statistics* for the years 1983–1987. The mean annual inflation rate for the United States over this period was 3.3 percent. Countries with inflation rate averages in the range of 10–25 percent are defined in this study as high-inflation countries. Inflation rates above 25 percent a year lead to a cumulative three-year inflation rate over 100 percent, hence a hyperinflation in FAS terms. Taking a 25 percent annual average inflation rate as a cut-off point for defining hyperinflationary economies does not exactly match individual business designations of hyperinflationary economies, based on erratic inflation rates and a three-year period of past and predicted inflation, but it should give a reasonably accurate indication of the prevalence of hyperinflationary economies.

The 25 high-inflation and 22 hyperinflation countries in this study are shown in Table 1. In number of countries, Latin America dominates the high-inflation group, and Africa the hyperinflationary group.

The number of countries with high or hyperinflation is quite high, but the volume of US investment in these countries is somewhat limited. The United States' direct foreign investment volume in individual countries at the end of 1982 was taken

Table 1.

High-inflation countries	Hyperinflation countries
Latin America:	Latin America:
Chile	Argentina
Colombia	Bolivia
Costa Rica	Brazil
Dominican Republic	Ecuador
El Salvador	Mexico
Guatemala	Nicaragua
Guyana	Peru
Jamaica	Uruguay
Paraguay	
Trinidad and Tobago	
Venezuela	
Other:	Other:
Bangladesh	Gambia
Egypt	Ghana
Greece	Iceland
Madagascar	Israel
Malawi	Sierra Leone
Nepal	Somalia
New Zealand	Sudan
Nigeria	Syria
Philippines	Tanzania
Portugal	Turkey
Solomon Islands	Uganda
South Africa	Yugoslavia
Swaziland	Zaire
Zimbabwe	Zambia

from the *Survey of Current Business*. The high-inflation countries accounted for 6 percent of total US direct foreign investment; hyperinflationary countries represented 10 percent. In volume of investment, Latin America dominated both groups, marginally in the high inflation group (51 percent), but overwhelmingly (93 percent) in the hyperinflationary group.

Purchasing Power Parity and US Investment Values

Because of the relatively low US inflation rate of recent years, countries in the high-inflation group have experienced a significant increase in their general price levels compared to the United States. The mean inflation rate of the high inflation countries over 1983–1987 was 17 percent. With the 13.7 percentage point difference between the high-inflation mean and the United States' mean inflation rate of 3.3 percent, price levels in the foreign countries relative to the United States almost doubled (index 1.90) in five years. Rough application of purchasing power parity theory suggests that the dollar price of the currencies of the high-inflation group should be cut in half. In fact, all dollar prices of currencies in the high-inflation group fell from the end of 1982 to 1987, by a mean of 52 percent.⁴

The monetary assets of US corporations in these countries may be presumed to have an inflation premium to maintain their real and dollar translated value, but the

real assets have lost approximately half their dollar value over the five years, if local currencies were their functional currencies. Evans and Doupnik⁵ found that local currencies have indeed been adopted for more than three-quarters of the foreign entities of US firms.

Assets do seem to have been lost. Over the period 1982–1987, only 4 of the 25 high inflation countries had increases in US direct investment, and the share of high-inflation countries in total US direct foreign investment dropped from 6 percent to 4 percent. During the same time span, only 6 of the 22 hyperinflation countries had decreases in US direct foreign investment, and the share of hyperinflation countries in total US direct foreign investment fell only from 10 percent to 9 percent. While these changes may imply a preference of US investors for “hyper” rather than “high” inflation countries, the relatively greater decline of US direct investment in high-inflation countries is likely the result of the use of FAS 52 reported dollar values by the *Survey of Current Business*.

Corporate Awareness and Response

Readers of the *Survey of Current Business* may not be aware of the extent to which declines in investment in certain countries are a reflection of accounting practice rather than investment climate. However, chief financial officers (CFOs) of US multinational corporations know that they have under-(ac)counted assets in some countries. The author’s⁶ recent survey of CFOs on the functional currency decision elicited these comments on FAS 52:

“Under the current rate method, the carrying value of capital assets is understated” (Multinational Rubber Company).

“Currency translation procedures are inadequate in those cases where the official inflation rate over the years does not hit 100% but the currency is in continuous decline against the dollar” (Multinational Oil Company).

When compared to total US direct foreign investment, the dollar value loss on real assets in high inflation countries may not be large, but for specific companies it can be important. One major international investor in the high inflation countries of Latin America had a unique solution to the problem. Xerox determined that its Latin American subsidiaries used the dollar as the functional currency, whether in hyperinflationary or just high inflation countries, as stated in the annual report:

“The financial position and results of operations of the Rank Xerox Companies and all of the Company’s foreign subsidiaries, except for the Latin American subsidiaries, are measured using local currency as the functional currency.”⁷

In their study of the choice of functional currency under FAS 52, Evans and Doupnik⁸ found some respondents reporting inflation as an additional factor (beyond the six economic indicators) influencing the choice of functional currencies:

“Although the instructions for this part of the questionnaire focus on the noninflationary situations, a few respondents listed inflation here.”

That may not have been an error in responding to the questionnaire. High, but less than "hyper," inflation may be a factor in functional currency choice, explaining in part why Evans and Douppnik⁹ found lower weight placed on the other six factors in South America than in the other regions of the world.

Conclusion

FAS 52 did not fix foreign currency translation. Failure to account for inflation in foreign countries, while the impact of inflation on exchange rates is recognized, distorts reported results of foreign operations and even the reported existence of foreign operations. Short of the acceptance of current valuation for nonmonetary assets, it may not be possible to approach a "best" solution, but explicit inclusion of host-country inflation rates as one of the economic factors considered in the determination of functional currencies would be a significant improvement of FAS 52.

The *Survey of Current Business* has recently (June 1991) reported current value estimates (current cost and market value) for aggregate direct investment abroad, but without a breakdown by country. While this adjustment to aggregate data is valuable, it remains impossible to compare the evolution and rate of return on direct investment in high and hyperinflation countries – virtually all of Latin America. It is also impossible to have confidence in any financial ratios that include significantly undervalued real assets in high inflation countries.

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The Impact of SFAS 14 Geographic Segment Disclosures on the Information Content of US-Based MNEs' Earnings Releases

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Key words: SFAS 14; Multinational corporations; Geographic segment earnings releases; Investors' expectations

Abstract: *The research investigates the impact of the SFAS 14 geographic segment disclosures upon the unexpected security price revisions induced by US-based multinational enterprises (MNEs') consolidated earnings releases. Extant research regarding segment disclosures suggests that geographic segment disclosures may improve investors' earnings expectations and thereby reduce the unexpected security price revisions coinciding with the consolidated earnings releases of US-based MNEs. The results of this study provide convincing evidence that a significant reduction in the unexpected security price revisions associated with unexpected earnings occurred subsequent to firms' implementation of the SFAS 14 geographic segment disclosures. These results suggest that the SFAS 14 geographic segment disclosures meet the predictive-ability criterion for usefulness established by SFAC 1, and thereby provide investors with an important source of price-relevant information which they are not obtaining from other sources.*

Introduction

With the issuance of *Statement of Financial Accounting Standard No 14* (SFAS 14), firms with significant foreign operations are required to disclose geographic segment information in the footnotes accompanying their financial statements. As extant research suggests that segment disclosures may improve investors' expectations regarding consolidated earnings, the SFAS 14 geographic segment disclosures may have resulted in a general improvement in investors' expectations regarding the

consolidated earnings releases of US-based multinational enterprises (MNEs). If so, a consequence of the SFAS 14 geographic segment disclosures may be a decrease in the unexpected security price revisions associated with firms' earnings changes. Such an impact would provide an initial indication that the SFAS 14 geographic segment disclosures meet the predictive-ability criterion for usefulness established by *Statement of Financial Accounting Concepts No 1* (SFAC 1).

The purpose of this research is to compare the association between unexpected earnings and unexpected security price revisions coinciding with US-based MNEs' annual earnings releases before and after their implementation of the SFAS 14 geographic segment disclosures. No attempt is made to distinguish among competing theories, such as predictability of earnings per share (EPS) (see Balakrishnan et al., 1990) and firms' following by financial analysts (see Bhushan, 1989a, 1989b), regarding the impact of firms' geographic segment disclosures on the security price response to their earnings releases. The results indicate that post-geographic segment disclosure magnitudes of unexpected earnings are associated with smaller magnitudes of cumulative unexpected equity security price changes than similar magnitudes of pre-geographic segment unexpected earnings for the MNEs and time periods examined. These results suggest that the SFAS 14 geographic segment disclosures resulted in improved expectation's regarding US-based MNEs' consolidated earnings releases and thereby provide investors with important price-relevant information which they are not obtaining from other sources.

The paper is presented in four sections. The first section discusses the motivation for the study. The data and research method are discussed in the second section. In the third section the empirical results are presented and discussed. The fourth section presents concluding remarks.

Motivation for the Research

The SFAS 14 geographic segment disclosures have added a great deal of data to firms' annual reports. These data are expected to increase substantially the amount of information available to users for valuing the equity securities of US-based MNEs. As the line-of-business disclosures have been available since 1970 (i.e., Securities Act of 1933, Release No. 4949, and Securities Act of 1934, Release No. 8397), the new information provided by SFAS 14 is the geographic segment disclosures.¹ While the SFAS 14 geographic segment disclosures have enabled researchers to evaluate their usefulness, the security price effects of these disclosures are not well understood. Several studies are devoted to accounting earning announcements and their association with market behavior. The Ball and Brown (1968) study may be considered seminal research as to the usefulness of accounting data in determining stock price movement. The Ball-Brown methodology has been used in numerous related contexts, such as quarterly earnings reports (e.g., Brown and Kennelly 1972; Foster, 1977), and non-New York Stock Exchange (non-NYSE) stocks (e.g., Foster, 1975, on OTC insurance companies; Brown, 1970, on the Australian stock market.; Firth, 1976, on British stocks; and Deakin et al., 1974, on the Tokyo exchange). All confirm the existence

of a statistically significant association between unexpected earnings and residual stock returns.

Research on the consequences of accounting regulation, due to the complexities of pronouncements by accounting standard-setting bodies (the FASB and its predecessors, the SEC, etc.) is relatively thin. Lev and Ohlson (1982) have referred to studies in this area, including research on Oil and Gas Accounting (SFAS 19), Accounting for Research and Development (SFAS 2), Line-of-Business (LOB) Reporting (SEC, 1969, 1970; FTC, 1974, 1975; and SFAS 14). In particular, Collins (1975), Kochanek (1975), Griffin and Nichols (1976), Horwitz and Kolodny (1977) and Collins and Simmonds (1979) examined various aspects of LOB disclosure and conclude that LOB segmented data, particularly sales figures, do provide information beyond aggregated reports. Balakrishnan et al. (1990) have demonstrated that geographic segment disclosures may be used to improve forecasts of consolidated earnings-per-share. So far, however, no research has examined the impact of geographic segment disclosures upon the association between unexpected security price revisions and unexpected earnings accompanying the consolidated earnings releases of US-based MNEs.

The proposition that firms' earnings releases provide investors in equity securities markets with an important source of price-relevant information is supported by the documented relation between magnitudes of unexpected earnings and magnitudes of unexpected security price revisions accompanying firms' earnings releases.² The extent of this relation, however, depends upon investors' prior information regarding the earnings release.³ To the extent that the SFAS 14 geographic segment disclosures improve investors' expectations regarding firms' earnings, a decrease in the unexpected security price revisions induced by magnitudes of unexpected earnings may follow as a consequence of SFAS 14.

It is now accepted that segment disclosures result in improved earnings expectations. Researchers such as Collins (1975), Kinney (1971), and Kochanek (1974) examine the predictive ability of LOB earnings disclosures relative to consolidated earnings. Their results suggest that LOB-based earnings forecasts outperform consolidated earnings forecasts. Consequently, the fundamental proposition (under the alternative) examined here is that the SFAS 14 geographic segment disclosures resulted in improved expectations regarding the consolidated earnings releases of US-based MNEs. If the geographic segment disclosures afford investors' improved expectations regarding US-based MNEs' consolidated earnings releases, one may expect to observe a decrease in the association between unexpected security price revisions and unexpected earnings subsequent to their implementation of the SFAS 14 geographic segment disclosures.

Data Collection and Research Method

The reporting years used are the 1975 and 1977 fiscal years for US-based MNEs. This time period includes the year preceding their implementation of geographic segment disclosures (i.e., 1975), and the year subsequent to their adoption of the SFAS 14 geographic area disclosure requirements (i.e., 1977).

Table 1. Specific data sources and the impact of the data filters applied to each source upon the interim and final sample size

Source	Sample size	Variables
COMPUSTAT Geographic Segment File	207	Identification
Wall Street Journal Index	171	Consolidated earnings announcement dates
CRSP Daily Return File	158	Daily security returns
COMPUSTAT Annual Industrial tape	119	Consolidated earnings and assets Close price and number of outstanding shares
Moody's Industrial Manual	150	Consolidated earnings and assets Close price and number of outstanding shares
Total number of firms	150	
Total number of firm observations	300 ^a	

^a One pre-SFAS 14 observation and one post-SFAS 14 annual earnings announcement observation for each sample firm.

The firms employed are identified as being US-based MNEs with significant foreign operations⁴ from the Standard and Poor's COMPUSTAT Geographic Segment data file. They are required to be NYSE or American Stock common equity listed firms with December 31 fiscal year ends. These filters identified 207 firms. Of these firms, 171 have their 1975 and 1977 annual consolidated-earnings announcement dates listed in the *Wall Street Journal Index*. The firms are required to have non-missing data in the Center for Research in Security Prices (CRSP) Daily Stock Return file. Of the 171 firms 158 have the requisite data on the CRSP tape. The COMPUSTAT Annual Industrial data file provides earnings before extraordinary items (Data Item No. 18), total assets (Data Item No. 6), close common share price (Data Item No. 24), and number of outstanding common shares (Data Item No. 25) data for 119 of the 158 firms. Missing data for 31 firms were obtained from *Moody's Industrial Manual*. These data filters result in a total of 150 firms, and 300 firm-year observations.⁵ The impact of these data filters on the sample size is shown in Table 1. Statistics summarizing the characteristics of the sample firms are shown in Table 2.

The equity security return data are the dividend-adjusted daily firm return (R_{it}) and the daily (dividend-adjusted) value-weighted market return (R_{mt}) obtained from the CRSP data file. The market model is used to calculate the daily unexpected security returns coinciding with firms' earnings release dates for each firm-year examined. As noted by Harrison et al. (1983, p. 67), this approach uses the value-weighted average return on the market portfolio as a control (non-treatment) group for the comparison of the association between unexpected security returns and earnings changes before and after the implementation of geographic segment disclosures by the (treatment) firms examined.

The firm-specific parameters of the market model are estimated using ordinary least-squares (OLS) techniques. As shown in equation (1), the intercept and slope coefficients are calculated using daily security returns over a time period of 110 trading days. The time period begins 120 days prior to the earnings release date, and

Table 2. Descriptive statistics regarding characteristics of sample firms

<i>Panel A: Firm-specific cumulative abnormal return^a</i>				
Years	Mean value	S. dev.	Max. value	Min. value
1975	−1.374	5.510	25.598	−12.587
1976	−0.294	4.175	21.993	−10.380
1977	−0.063	4.183	25.480	−13.393
<i>Panel B: Capitalized equity value^b</i>				
Years	Mean value	S. dev.	Max. value	Min. value
1975	2.344	1.748	6.774	−2.674
1976	2.273	1.735	6.987	−1.236
1977	2.384	1.940	8.162	−5.591
<i>Panel C: Unexpected accounting earnings^c</i>				
Years	Mean value	S. dev.	Max. value	Min. value
1975	0.029	0.052	0.340	0.001
1976	0.025	0.036	0.215	0.001
1977	0.021	0.033	0.270	0.001
<i>Panel D: Annual earnings announcement reporting delay^d</i>				
Years	Mean value	S. dev.	Max. value	Min. value
1975	41.213	16.287	89.000	9.000
1976	39.912	15.723	90.000	11.000
1977	39.093	14.925	89.000	3.000
<i>Panel E: Degree of international operations^e</i>				
% Foreign	Mean value	S. dev.	Max. value	Min. value
Sales	0.263	0.136	0.580	0.030
Assets	0.251	0.162	0.710	0.010
Earnings	0.299	0.150	0.660	0.060

^a algebraic sum of unexpected returns over four-day period ending with the earnings announcement date

$$CAR_i = \left| \sum_{t=-4}^{t=0} \mu_{it} \right|$$

^b Natural logarithm of capitalized equity value in millions of US dollars.

$$V_i = \ln(P_i \cdot NOS_i)$$

^c Absolute value of earnings changes deflated by total market value of equity

$$UE_i = \left| \frac{E_{it} - E_{it-1}}{V_i} \right|$$

^d Number of days following fiscal year end on which earnings announcement occurs.

^e Percentage foreign sales, identifiable assets, and operating profit reported for 1976.

ends on the 11th day prior to the earnings release date.⁶ The firm-specific daily unexpected security returns are calculated as the actual return minus the expected return.

$$\begin{aligned} R_{it} &= \alpha_0 + \alpha_1 R_{mt} + \mu_{it} \\ \text{for: } t &= -120, \dots, -11 \\ i &= 1, \dots, 300 \end{aligned} \tag{1}$$

A firm-specific cumulative abnormal return ($CAR_i, i = 1, ..., 300$) is used as the measure of the unexpected security price revisions associated with the firms' earnings releases. As shown in equation (2), the CARs are the absolute value of the algebraic sum of the firm-specific unexpected returns over a four-trading-day period ending with the earnings announcement date.⁷

$$CAR_i = \left| \sum_{t=-4}^{t=0} \mu_{it} \right| \tag{2}$$

for: $i = 1, ..., 300$

The beginning-of-period capitalized value of common equity (V_i) is used as a measure of firm size. As shown in equation (3), it is the product of the closing common share price (P_i) and number of outstanding common shares (NOS_i) on the December 31 preceding the earnings release. A logarithmic data transformation of capitalized equity value (in millions of dollars) is used to reduce the skewness of these data.

$$V_i = \ln (P_i \cdot NOS_i) \tag{3}$$

for: $i = 1, ..., 300$

The random walk earnings expectation model is employed. We used previous year earnings as a surrogate for expected earnings for the current year.⁸

$$E[E_{it}] = E_{it-1}$$

The consensus of prior research is that when annual data are used to predict income, the random walk model performs as well as more complex time-series prediction models (e.g., Balakrishnan et al., 1990; Bao et al., 1983; Hopwood et al., 1982).⁹ The measure of unexpected earnings (UE_i) used is the absolute value of the first difference in consolidated earnings before extraordinary items and discontinued operations (E_{it}). As shown in equation (4), the earnings changes are deflated by the logarithm of beginning-of-year total market equity value in order to mitigate the potential impact of heteroscedastic residuals upon coefficient estimates in regression analysis.

$$UE_i = \frac{E_{it} - E[E_{it-1}]}{V_i} \tag{4}$$

for: $i = 1, ..., 300$.

Table 2 also shows summary statistics regarding the sample firms' cumulative abnormal return, equity value, unexpected earnings, reporting delay, and degree of international involvement for descriptive purposes. Panel A of Table 2 clearly shows that unexpected security price revisions have been diminished over the three year study period (1975–1977). The consolidated earnings announcement delay is measured as the number of days following the fiscal year end which lapse prior to the earnings release date. The mean values of firms' reporting delay over the three years under

study are very close, indicating SFAS 14 did not change the timing of announcement. The degree of international involvement measures are the percentages of foreign sales, assets, and operating profit reported by the firms for 1976, the year of implementation of the SFAS 14 geographic segment disclosures.¹⁰

Table 3 shows *t*-statistics regarding tests of the null hypothesis of no difference in the mean cumulative abnormal security returns during firms earnings release periods prior to (year 1975) and subsequent to (year 1977) the inception of SFAS No. 14 geographic segment disclosures. Panel A of Table 3 presents the *t*-test for the sample firms stratified by capitalized equity value. The null hypothesis of no difference in the cumulative abnormal security returns is rejected at the $\alpha = .05$ confidence level for all but one quintiles. Quintile one (the smaller firms in the sample) has reduced mean value of cumulative abnormal return from pre- to post-SFAS 14. This reduction, however, is not significant, probably because smaller MNEs have relatively lower degree of international involvements and so provide smaller additional information through geographic segmented reporting. Panel B of Table 3 presents the *t*-tests for the sample firms stratified by unexpected earnings. The null hypothesis

Table 3. *t*-Tests under null hypothesis of equality of mean cumulative abnormal security returns before and after SFAS No. 14 geographic segment disclosures^a

<i>Panel A: Mean cumulative abnormal return values by ascending capitalized equity value quintiles^b</i>				
Quintile number	Before SFAS No. 14 (1975)	After SFAS No. 14 (1977)	<i>t</i> -Statistic equal variances	<i>t</i> -Statistic unequal variances
One	5.7382 (1.1641)	4.5644 (1.0767)	0.7405 (0.4621)	0.7403 (0.4621)
Two	3.2266 (0.4712)	2.0015 (0.2778)	2.1820* (0.0331)	2.2396* (0.0296)
Three	3.9277 (0.5120)	1.5905 (0.2900)	3.9368* (0.0002)	3.9714* (0.0002)
Four	4.0381 (0.4607)	2.2979 (0.3570)	3.0158* (0.0038)	2.9854* (0.0042)
Five	4.3268 (0.4660)	2.5733 (0.3866)	2.9157* (0.0050)	2.8959* (0.0054)
<i>Panel B: Mean cumulative abnormal return values by ascending unexpected earnings quintiles</i>				
Quintile number	Before SFAS No. 14 (1975)	After SFAS No. 14 (1977)	<i>t</i> -Statistic equal variances	<i>t</i> -Statistic unequal variances
One	3.6915 (0.4853)	1.8882 (0.3883)	2.9372* (0.0047)	2.9010* (0.0054)
Two	4.0464 (0.4107)	2.2008 (0.3275)	3.4991* (0.0009)	3.5130* (0.0009)
Three	3.5052 (0.5618)	2.6172 (0.4989)	1.1792 (0.2431)	1.1744 (0.2451)
Four	5.3802 (0.8110)	2.4764 (0.5851)	2.8114* (0.0067)	2.9036* (0.0053)
Five	4.5158 (0.8339)	4.0419 (0.9889)	0.3690 (0.7134)	0.3663 (0.7155)

^a *p*-Values shown in parentheses below *t*-statistics.
^b Standard error of estimate shown in parentheses below estimates of means.
* Significant at a = .05 confidence level.

of no difference in the cumulative abnormal security returns is rejected at the $\alpha = .05$ confidence level for three of the five quintiles, suggesting that differences in the magnitudes of unexpected returns may persist after controlling for magnitudes of unexpected earnings.

This research uses a regression analysis approach to evaluate the impact of the SFAS 14 geographic segment disclosures upon the association between firms' unexpected earnings and unexpected security price revisions. The dependent variable is cumulative abnormal security return (CAR_i) following upon firms annual earnings releases, and the independent variables are capitalized common equity value (V_i) and unexpected earnings (UE_i). A qualitative variable (D_i) is used to distinguish between periods prior to and subsequent to firms' implementation of the SFAS 14 geographic segment disclosures.¹¹ The interactive effects of geographic segment disclosures and earnings changes are represented in the regression by the independent variable $D_i \cdot UE_i$. The regression is shown in equation (5) below. OLS estimation techniques are employed.¹² The a_j ($j=0, \dots, 3$) are estimated coefficients, and u_i are residuals.

$$CAR_i = a_0 + a_1 \cdot V_i + a_2 \cdot UE_i + a_3 \cdot D_i \cdot UE_i + u_i \quad (5)$$

for: $D_i = 0$ if before SFAS No. 14

$D_i = 1$ if after SFAS No. 14

The hypothesis tests concern the signs and magnitudes of the estimated coefficients for regression equation (5). As the previous literature provides evidence regarding the expected signs of the estimated coefficients, one-tailed hypothesis tests are used in this research. The empirical result by Atiase (1985, p. 34) suggests that unexpected equity security price revisions coinciding with earnings releases are decreasing in relation to capitalized equity value. Consequently, a_1 is hypothesized (H_{a1}) to be less than zero. The research literature summarized by Easton and Zmijewski (1989) provides convincing evidence that the magnitudes of unexpected security price revisions and magnitudes of unexpected earnings are positively correlated. As a result, a_2 is hypothesized (H_{a2}) to be greater than zero.

As discussed previously, extant research regarding segment disclosures suggests that they may improve investors expectations of firms' earnings releases. Consequently, the primary proposition evaluated in this research is that the association between MNEs' earnings changes and unexpected security price revisions decreases subsequent to their implementation of the SFAS 14 geographic segment disclosures. Therefore, a_3 , which reflects the interaction of earnings changes and firms' implementation of the SFAS 14 geographic segment disclosures, is hypothesized (H_{a3}) to be less than zero. While the estimated regression coefficient for the post-geographic segment disclosure earnings changes should be smaller than the pre-geographic segment disclosure coefficient, it is hypothesized (H_{a4}): ($a_2 + a_3$) to be greater than zero. Since a_3 is known to be equal to $a_{3p} - a_2$, where a_{3p} is the regression coefficient for the post-geographic segment disclosure earnings changes, testing the null hypothesis $H_0: a_{3p} \leq 0$ is equivalent to testing $H_{04}: a_2 + a_3 \leq 0$. These hypotheses are summarized in Table 5.

Table 4. Results of cross-sectional regression of firm-specific cumulative abnormal returns during earnings announcement periods onto unexpected earnings before and after SFAS No. 14 geographic segment disclosures^a

Independent variables	Capitalized equity value	Unexpected earnings	Interaction variable
Coefficient estimates ^b	$\alpha_1 = -0.062$	$\alpha_2 = 14.109$	$\alpha_3 = -8.555$
<i>t</i> -Statistics ^c	-1.915*	3.370*	-2.382*
Regression <i>F</i> -statistic	4.960*		
Regression coefficient of determination (<i>R</i> ²)	.052		

^a The regression equation is shown below

$$CAR_i = a_0 + a_1 \cdot V_i + a_2 \cdot UE_i + a_3 \cdot D_i \cdot UE_i + u_i$$

for: $D_i = 0$ if before SFAS No. 14
 $D_i = 1$ if after SFAS No. 14

(4)

^b The regression model is estimated with an intercept term which is significantly different from zero and is not reported.
^c based on one-tailed hypothesis tests.
* significant at the $\alpha = .05$ confidence level.

Results

The results of the regression analysis and hypothesis tests are shown in Tables 4 and 5 respectively. Table 4 shows the estimated regression coefficient for capitalized equity value (V_i), unexpected earnings (UE_i), and the interaction of firms' implementation of the SFAS geographic segment disclosures and unexpected earnings ($D_i \cdot UE_i$). Related *t*-statistics are shown directly below the estimated coefficients. In addition, Table 4 shows the regression *F*-statistic and coefficient of determination (*R*-squared).

The regression coefficient result for firm size (V_i) is consistent with previous findings of Atiase (1987), Bamber (1986), Collins et al. (1987), and Grant (1980). The unexpected equity security price revisions associated with firms' earnings releases are smaller for larger firms. It confirms that the amount of "unexpected" information conveyed to the market by actual earnings announcements is inversely related to firm size. Table 4 indicates that a_1 is significantly less than zero at the $\alpha = .05$ confidence level. Therefore, Table 5 indicates that H_{01} is rejected. The regression results obtained for unexpected earnings (UE_i) are also consistent with previous studies (e.g., Stober, 1986; Easton and Zmijewski, 1989). Magnitudes of unexpected

Table 5. Summary of results of hypothesis tests

Null hypothesis	<i>t</i> -Statistic	<i>F</i> -Statistic	Result ^a
$H_{01}: a_1 \geq 0$	-1.915	NA	Reject null
$H_{02}: a_2 \leq 0$	3.370	NA	Reject null
$H_{03}: a_3 \geq 0$	-2.382	NA	Reject null
$H_{04}: a_2 + a_3 \leq 0$	NA	2.084	Reject null

^a One-tailed hypothesis tests at $\alpha = .05$ confidence level

security price revisions are increasing in relation to magnitudes of unexpected earnings. Table 4 shows that a_2 is significantly greater than zero at the $\alpha = .05$ confidence level. As a result, Table 5 indicates that H_{02} is rejected.

As suggested in accounting literature concerning the impact of segment disclosures upon investors' expectations of firms' earnings releases, if the SFAS 14 geographic segment disclosures afford investors improved expectations regarding MNEs' consolidated earnings, then MNEs' earnings releases will induce smaller magnitudes of unexpected security price revisions subsequent to their implementation of geographic segment disclosures. Indeed, Table 4 indicates that a_3 is significantly less than zero at the $\alpha = -.05$ confidence level. Therefore, Table 5 reveals that H_{03} is rejected. In addition, Table 5 indicates that the null hypothesis (H_{04}) that the post-geographic segment disclosure earnings changes coefficient is less than or equal to zero is also rejected at the $\alpha = .05$ confidence level. Consequently, the earnings coefficient for the post-SFAS 14 period is significantly less than the earnings coefficient for the pre-SFAS 14 period, though significantly greater than zero. The theoretical implication of these results is that the SFAS 14 geographic segment disclosures resulted in a general improvement in investors' expectations regarding MNEs' consolidated earnings, and, therefore, a relative diminution of the importance of the consolidated earnings release as a source of price-relevant information. A consequence of improved expectations is that the SFAS 14 geographic segment disclosures meet the predictive-ability criterion for usefulness established by SFAC 1.

Concluding Remarks

The research compares the association between MNEs' unexpected security price revisions and earnings changes before and after their implementation of SFAS 14 geographic segment disclosures. Extant research concerning the impact of segment disclosures on earnings expectations suggests that the SFAS 14 geographic segment disclosures may have improved investors' information regarding the consolidated earnings of US-based MNEs. If the SFAS 14 geographic segment disclosures provide investors with information which they are not obtaining from alternative sources, then one may expect to observe a decrease in the unexpected security price revisions induced by MNEs' unexpected earnings.

The results indicate that the implementation of geographic segment disclosures by US-based MNEs may have decreased the association between their unexpected security price revisions and annual consolidated earnings changes. The results are consistent with the contention that the SFAS 14 geographic segment disclosures resulted in improved investor expectations regarding the annual consolidated earnings of US-based MNEs. Consequently, the result of this research suggest that the SFAS 14 geographic segment disclosures provide investors with an important source of information which they are not obtaining from alternative sources and are useful in improving expectations regarding future consolidated earnings.

An important limitation of the research is the small number of reporting periods examined relative to the implementation of SFAS 14. Future research might evaluate

the association between unexpected security price revisions and unexpected earnings over a longer period of time relative to the implementation of the SFAS 14 geographic segment disclosures.

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Notes

1. In 1977, the SEC also adopted geographic area disclosure requirements with the issuance of Accounting Series Release No. 236.
2. Easton and Zmijewski (1989) survey the extant literature.
3. Accounting researchers such as Atiase (1985, 1987), Bamber (1986, 1987), Collins et al., (1987), and Freeman (1987) document that large firms' security price response to earnings releases is smaller than small firms', suggesting that investors have better expectations regarding large firms' earnings releases.
4. According to SFAS No. 14 certain firms are required to disclose information about enterprise operations in different industries, foreign operations, and export sales, and major customers. Firms with having sales, total assets, or operating profits in each segment greater than 10% of consolidated sales, total assets or operating profits respectively.
5. Firms which engaged in pre-SFAS 14 geographic area disclosures were identified and eliminated to the extent possible.
6. The period is subjectively selected long enough prior to the announcement date to reflect the average association of firms' return and market return without the effect of new earnings announcements. Collins et al. (1987) used a period of 104 weeks.
7. $t = -4$ to zero is used because the Ball and Brown (1968) results suggest that a large portion of earnings news is anticipated. In theory, no price adjustment should occur subsequent to the earnings release. In addition, earnings news usually appears on the Broad Tape on the floor of the stock exchange one or two days prior to its appearance in the *Wall Street Journal*.
8. The random walk earnings expectation model is employed. Bathke and Lorek (1984, p. 167) note a 10% reduction in the mean absolute forecast error using the Foster (1977) model, and a 9 percent reduction using the Brown and Rozeff (1979) model. Consequently, the predictable errors in earnings forecasts do not appear to be large, and are not expected to materially effect the results of this research.
9. Balakrishnan et al. (1990) also use the random walk with a drift term for each firm (i.e., $E_{it} = E_{it-1} + \theta_{it}$) and concluded that the result is not better than pure random walk model.
10. The foreign sales, assets, and operating profit data are obtained from the firms' 1976 annual reports.
11. The regression technique used is that suggested by Johnston (1984, p. 227).
12. Clustering, in the vernacular of Brown and Warner (1980, p. 232), is not expected to be a problem in this research due to the dispersion of firms' earnings release dates over the three-years period examined and because daily return data are much less sensitive to clustering effects.

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Book Reviews

Research in Third World Accounting, Volume 1, edited by *R.S. Olusegun Wallace, John M. Samuels and Richard J. Briston*. JAI Press Ltd, London, 1990, 299 pp, ISBN 1-55938-134-5. (US\$63.50)

This book presents a number of papers intended to serve as input to the efforts of international organizations investigating the accounting needs of the Third World. Unlike the current tendency to encourage the harmonization of standards for external reporting to stockholders, the authors of this volume take the perspective that different cultures have different objectives for accounting and that the accounting systems growing from those different objectives should logically be expected to be different. Interestingly the April 1991 issue of the IASC News (page 3) states:

the lack of agreement on the objectives of financial reporting may be an impediment to the improvement and harmonization of accounting requirements.

This book represents a valuable contribution to international accounting theory if only because it does not take the position that such a diversity in objectives and methods is to be regretted, but that it is natural and useful. The cultural relativistic position has been underrepresented in the recent literature and it is gratifying to see the position argued well and forcefully.

The book could have been more carefully proofed, although the only typographical error which is likely to cause difficulties is the misspelling of the name of one of the authors (Ji-Liang) on the title page of one of the articles he co-authored.

The book is divided into two major segments: a section containing five general studies and a section offering nine country studies. The articles are arranged in a logical order and it would be preferable if they were read in that order.

In the first general paper, R.S. Olusegun Wallace, the managing editor of the volume, presents a review of the literature on accounting in developing countries, dividing his review into five sections: (1) conceptual/normative, which deals with the sources of accounting models in different countries; (2) descriptive country studies, which contains two subsections – general international surveys and studies which deal with one country in some detail (the largest section); (3) global studies of developing countries in a world context; (4) comparative studies of two or more countries; and (5) suggestions to improve accounting in developing countries.

In the second general paper Mfandaidza R. Hove compares the disclosure standards of the United States and the United Kingdom with those of the IASC. He argues that

the United States and the United Kingdom have such significant influence on the disclosure standards of the IASC that it is doubtful whether those standards are useful and relevant to other IASC members, especially to those which are among the economically less developed countries.

In the third general paper, J.M. Samuels argues that the Third World needs an approach to accounting different from that of the industrialized nations. In particular he stresses that, due to the frequent market imperfections in the Third World, market prices do not accurately reflect the relative scarcity of the factors of production and that ultimately it is important to measure the total impact of an enterprise on society. He suggests some additional disclosures which would be seen as evolutionary rather than revolutionary and which would use information already available in the enterprise.

In the fourth general paper, Keith Maunders, Robert Gray, and David Owen propose a new type of management accounting system for public enterprises in developing countries to promote goal congruence between the managers and the prescribed social objectives of such enterprises. This system would be based on reporting routine accounting control information to operating managers on the basis of shadow prices rather than market prices, since market prices are frequently lacking in the Third World context (as argued by Samuels in the third general paper).

In the fifth general paper, John Craner and Rowan Jones present counter-arguments to those of Nobes (1989) and others who claim that accrual accounting is inappropriate for the governments of Third World countries. They note that a number of models which were being urged upon Third World governments in fact were clearly not appropriate, but that accrual accounting cannot convincingly be dismissed.

In the first country study, M.J. Parry and R.E. Groves describe a study conducted in Bangladesh which assesses the impact of qualified accountants on the quality of both managerial and financial accounting in the organizations in which they are employed. Their disturbing overall conclusion on the basis of a number of different measurements was that there was no significant difference between the quality of accounting of organizations which employed qualified accountants and those which did not.

In the second country study, Richard A. Maschmeyer and Yang Ji-Liang describe the accountability of state enterprise performance during the economic transformation in the People's Republic of China. They discuss the situation before the 1979 reforms, the impact of the reforms on state enterprises, some new experiments on enterprise management systems to enhance accountability, and finally some recommendations concerning management accounting during the reformation period.

In the third country study, Clifford R. Skousen, Yang Ji-Liang, and Dai Xin-min review recent developments in China's auditing laws and regulations at a time of rapid economic change. They describe the current structure of the audit function and the organization for its operation. They examine issues dealing with state auditing, internal auditing, and social auditing. They indicate that major issues to be resolved include auditor independence, shortages of qualified personnel, and a lag in the development of auditing regulations, giving suggestions to help address each of these issues.

In the fourth country study, I.M. Pandey describes the Indian experience in development finance management. He first examines the stages of project financing

from the initial application through to follow-up. He then focuses on the development agencies themselves and describes their strategic planning processes and management training. He concludes that the Indian development finance agencies are generally doing a good job, but that as they experience increasing success in sponsoring industrial development they need to derive substantially more funds by mobilizing savings.

In the fifth country study, Richard J. Brinson considers the international evolution of accounting with reference to the advisability of international or regional harmonization, particularly using the cases of Indonesia and the Solomon Islands. He begins by tracing the history of the UK accounting system and its spread to the United States. He then discusses its spread into other countries, noting that if very little accounting existed before, the US/UK system is an improvement, but that the US/UK system, as well as the IASC system derived from it, evolved in a particular economic environment and may not fit the needs of other countries. He further argues that, especially in the Third World context, accountants represent a scarce resource that might be better directed to providing information for internal or governmental decision making rather than to the external audit of companies which are already compelled for reporting to largely non-existent private sector shareholders.

Brinson describes the economic and accounting situation in Indonesia and in the Solomon Islands in detail, emphasizing the differences in economic structure between these two countries and the United States/United Kingdom. Although he argues that regional harmonization is unlikely to be feasible and may even be harmful, he suggests that the structure which is evolving in the Solomon Islands could become a model, not only for the surrounding island nations, but for developing countries world wide.

In the sixth country study, Jassem al-Mulhad presents the results of a questionnaire study conducted in Kuwait on the relative credibility of financial statements audited by affiliates of big eight international firms as opposed to those audited by local independent auditors. His survey found that both investors and lenders prefer statements audited by big eight affiliates. Although a surprising number of both 21 percent of lenders and 42 percent of investors responded that they did not make use of audited financial statements. The study also examines factors used as increasing or decreasing credibility.

In the seventh country study, Nabil Baydoun and Robert Gray present an exploratory study of accounting in hyperinflationary conditions, using the Lebanon as a case in point. They begin by presenting a description of the economy and the financial accounting and reporting system of the Lebanon, commenting that the industrial base of the country has collapsed for all practical purposes so that the financial statements of the country's industries do not exist. In the second part of the paper they report companies' financial statements for general inflation. Lucy Davidson and Wael A. GPR mentioned explore the impact of inflation on Lebanese financial statements.

In the eighth country study, Richard J. Brinson and Fui See Liang trace the development of corporate reporting in Singapore and examine the impact of legislative influence on corporate reporting practices. The authors find that these practices in Singapore began essentially as a copy of the British system and that they have since diverged as Singapore has searched for rules and practices that meet its own needs.

They see this divergence as auguring poorly for the future of international harmonization.

In the ninth country study, Richard J. Briston and R.S. Olusegun Wallace report on Tanzania's efforts to develop an indigenous stock of accountants and to produce corporate disclosure standards that will respond to specific Tanzanian needs. They state that Tanzania has rejected the two extreme options of localism (development of wholly new accounting) and universalism (wholesale importation of accounting) for naturalism (drawing on the experience of foreign countries to find components that can be assembled into accounting solutions which suit their own needs). They describe the Tanzanian system for educating and qualifying accountants and the Tanzanian accounting standards, including a number of required disclosures, some of which are unique to Tanzania.

This book makes a substantive contribution to the literature concerning the international harmonization of accounting standards. It first presents a series of theoretical articles, then it draws together a number of individual country studies which are interesting in their own right and which, when taken together, provide a unified body of support for the general theoretical position of the book. This book raises serious issues which must be addressed by those favoring harmonization, whether based on the IASC or the EEC model.

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Multinational Management Accounting by *Ahmed Belkaoui*, *Quorum Books*, New York, 1991, 292 pp., \$59.95

This eleven chapter, medium-sized volume, aims to explore the "specific environment of multinational management accounting and the unique managerial accounting techniques to be used for an efficient conduct of multinational operations." With the globalization of most economies and the proliferation of multinational firms, Balkouis' work offers a needed exposition of the newly developed environmental elements in the field of management accounting resulting from the international operations framework. Furthermore, it provides the reader with a survey of techniques and methods relevant to the multinational environment. Results of surveys, empirical research, and models applied in different areas are presented, discussed, and appraised. While these techniques are already known and available in their own specified areas of inquiry, the contribution is readily seen in the systematic collection and presentation of these techniques and the stress on their adaptation and application within the framework of international management accounting.

The book is addressed to both academics and practitioners interested in multinational management accounting. Lists of classical and recent references cited at the end of

each chapter, in addition to practical examples, computations, and references to actual corporate experiences, enrich the work and make it of interest to academics, researchers, and public accountants engaged in the multinational context. It may be seen as a text in graduate or advanced undergraduate courses in which students are exposed to issues of multinational management accounting.

Divided into four sections, the book begins by discussing the international environment (Chapter 1); exploring the risks and management of exchange rates (Chapters 2–5); discussing the organization and control structure of multinational firms (Chapters 6 and 7); and, finally, presenting the managerial accounting issues inherent in the international operations framework (Chapters 7–11).

The first section consists of one chapter which discusses the recent trends and challenges in globalizing the economy to capture “the manufacturing, financing, and marketing opportunities that exceed local markets.” International trade theories, from mercantilism to product life cycle, are presented as explanatory powers behind the drive for international expansion. The chapter ends with a discussion of theories of foreign direct investment to complete the identification of the variables and parameters that characterize the global strategy and define the international finance and multinational management techniques.

The second section of the book, comprising Chapters 2, 3, and 4, focuses on the problem of exchange rate risks as a significant issue within the international context. First, the background information on exchange rate determination models and the efficiency of foreign exchange markets are provided (Chapter 2). The different models for exchange rate determination under a freely floating system are presented, followed by a discussion of forecasting exchange rates in a managed or fixed case, efficiency of foreign exchange markets, and an evaluation of exchange rate forecasting techniques.

Foreign exchange risk has its impact on the profitability, financial position, and transactions of multinational firms. Three types of exposure are identified: economic, transaction, and translation. However, only the first two types are discussed, with one chapter devoted to each. Economic exposure (Chapter 3), defined as changes in the firm’s economic value resulting from the impact of unforeseen changes in foreign exchange rates on operating cash now, is presented and compared with accounting exposure. Three methods of measuring economic exposure, namely net present value, the income statement, and regression methods, are introduced. The author concludes the chapter by stating that “a proper strategic planning framework ... can provide senior management greater effectiveness in managing economic exposure in the long-run.”

Chapter 4 considers the management of transaction exposure arising “whenever the future transaction of a firm is affected by potential exchange rate fluctuations.” Methods of eliminating or at least reducing this risk which were surveyed are forward contracts, money markets, futures contract, and currency option hedges. In addition, various forms of swaps and operating strategies to reduce transaction exposure are discussed.

The third section focuses on the issues of organizing and controlling multinational firms which are viewed by the author as “one way of benefitting from the opportunities and fending off obstacles.” After a brief discussion of various theories of

organizational change and the genesis of the multi-divisional firm, the author discusses different types of organizational structures adopted by multinationals (separate international divisions, product divisions, geographical divisions, functional divisions, matrix organizations and strategy mix). Starting with a discussion of control performance, results of surveys of techniques used for performance evaluation internationally, and the treatment of currency considerations in performance evaluations using the Tess/Sorange model.

The fourth section, the core of the book, is devoted to a treatment of management accounting issues. International financial analysis (Chapter 7) treats ratio analysis and predictor models of economic events. Conventional (financial ratio analysis is discussed and the needed adjustments to deal successfully with the international environment are stressed. Other forecasting methods for corporate restructuring, debt rating, and financial distress analysis are presented as well as the need to adjust these models to fit the international environment.

Capital budgeting topics and unique problems in multinational capital budgeting constitute the contents of Chapters 8 and 11. Such problems include differences in cash flow projections from the perspectives of the subsidiary and parent corporations, foreign tax regulations, and political and economic risks. Known methods of containing risk in capital budgeting problems are also illustrated. For capital budgeting in developing countries in order "to take both a long and a wide view of the impact of a proposed project on the general welfare of a society," stress is given to the need for cost-benefit analysis. Additional topics and issues, such as capital rationing, risk and uncertainty, inflation, and investments in the new technology, and the methods of handling such issues, are considered in Chapter 11.

Pricing strategies as a determinant of profitability and success are reviewed in Chapter 9 from both perspectives of product and transfer pricing. The economist's and accountant's approaches to product pricing are both presented in this chapter. The former is profit maximization and the latter includes ROI, total cost, and the materials and labor used. The author also discusses product pricing under the Robinson Patman Act and introduces the reader to a myriad of new factors complicating decisions on the international level. Methods of transfer pricing (market, cost, negotiated, or dual based) are discussed before focus is given to the additional criteria and conditions prevailing in the multinational levels. More importantly, the Internal and the International Tax Legislation as well as the Revenue Code, Section 482, the 1977 Regulation 861, import/export duties, exchange rates, and cultural and national considerations, are stated in terms of their impact on international transfer pricing. The accounting treatment of transfer prices (SFAS 57 and IAS 24) are discussed.

Leasing, as an alternative to buying and/or financing, is becoming more important at the international level and the author devotes Chapter 10 to "explain leasing arrangements and the main issues in financial leasing and to provide a methodology for international analysis." After defining various types and financial conditions of leasing, the common advantages of leasing are stated and assessed. Models of lease evaluation developed by Johnson and Leweller, Roenfeldt and Osteryoung, and Bower are surveyed and discussed with the final view that "Bower's decision format of lease analysis is the most appropriate to use today."

The book is a contribution to the field of international management accounting as it creates the framework to view and analyze the problems and variables emerging from the accelerating globalization during the last decade. In addition, various methods and models developed or extended to handle the international dimension of management accounting are concisely stated, discussed, and appraised. Doubtless, the book will be an aid to management accounting practitioners and academics in coping with the multinational dimensions of business operations.

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1. Manuscripts should be submitted in triplicate to the Editor, Professor V K Zimmerman, The International Journal of Accounting, 320 Commerce Building (West), University of Illinois at Urbana-Champaign, 1206 South Sixth Street, Champaign, Illinois 61820, USA.

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¹William A. Dymsza, Multinational Business Strategy (New York: McGraw-Hill, 1972), 49-53.

²Geoffrey Holmes, "Replacement Value Accounting," Accountancy (March 1972), 4-8.

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_____. "Financial Statements Restated for General Price Level Changes." Statement of the Accounting Principles Board No. 3. New York: AICPA, 1969.

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The Views of Limperg and Schmidt: Discovering Patterns and Identifying Differences from a Chaotic Literature

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Key words: Accounting; History; Replacement Price Accounting; Development

Abstract: *In the history of accounting thought Theodore Limperg is an enigma. Limperg's contribution to the replacement price accounting (RPA) case has been referred to frequently over the last forty years. Identifying what Limperg actually wrote, and whether he wrote it, are far more difficult to determine. It is surprising that Fritz Schmidt's work generally takes a back seat in those discussing the development of RPA. For Schmidt published widely in German, in English and, in contrast with Limperg, even in Dutch, as early as 1923. Our research strengthens MacDonald's claim that Schmidt's work, not Limperg's, is the European origin of the theory of RPA. Several other accounting myths are debunked. The so-called modern-day variants of RPA – with a value to the owner or Hyde-type gearing adjustment – are shown not to be the result of an evolutionary development. Rather, similar adjustments appeared in Schmidt's and Limperg's initial proposals.*

During the 1970s current cost accounting (CCA) appeared likely to replace, or at least supplement, historical cost accounting. CCA was regarded as radical at the time, though it certainly was not new. Yet relatively little is discoverable from the Anglo-American literature of the 1920s European accounting and business economics proposals which often are said to be the theoretical antecedents of the modern CCA.

In the Anglo-American literature, and even in the European literature, many authors have alluded to the significance of Theodore Limperg's ideas in the context of developing systematic CCA proposals.¹ Recognition of Schmidt's influence has been gaining momentum also.²

Renewed interest in both Limperg's and Schmidt's works, however, has produced contradictory evidence regarding the primacy issue and whether their respective replacement cost theories differed. A growing theme suggests that Schmidt's work not only pre-dates Limperg's, but that its theoretical structure is similar and equally formidable.³ Tweedie and Whittington⁴ (1984, p. 30) suggest that "there is also some doubt as to the extent which [Limperg] was influenced by Schmidt," suggesting that "there are probable doubts as to the originalities of Limperg's system" (p. 32). MacDonald⁵ is emphatic that the ideas of Schmidt represent the European origin of replacement cost theory in the accounting literature. We concur with MacDonald and further speculate in this article that there are more similarities in their works than previously suggested in the literature. At issue is whether Schmidt's thesis drifted into the Dutch thinking before Limperg's influence may have been experienced.

In 1923 Schmidt wrote "De winst van de onderneming" for the Dutch audience, following lengthy periods of fluctuations in both prices and price levels in the Netherlands. It appeared in the first issue of *Bedrijfseconomie* journal, *De naamloze vennootschap roermond* (February 15 and March 15, 1923). Curiously, it appears that the first reference to this 1923 publication has only recently been made in the Anglo-American literature.⁶ Its focus (the composition of business profit) essentially was a summary of his organic theory, as initially developed and published in German as *Die organische Bilanz in Rahmen der Wirtschaft*, in 1921. This 1921/23 theme was expanded subsequently to form the basis of the paper "Profit and Balance Sheet Value"⁷ delivered (in German) by Schmidt at the 1926 2nd International Accountants Congress in Holland. Significantly this 1926 paper was reproduced virtually verbatim in Schmidt's 1929 3rd edition⁸ (pp. 54–90) of *Die organische Tageswertbilanz*. It then appeared, albeit rearranged, in a relatively little referenced 1929 English article by Schmidt appearing in *The Accountant* (1929). The existence of the 1923 Dutch publication, coupled to the consistency of Schmidt's ideas over time, lends added support for those arguing that Schmidt's theory was complete and was accessible to Dutch scholars by 1922, or early in 1923. It is likely that MacDonald, an early speculator on the subject, was unaware of the existence of the 1923 publication when drawing his controversial inference as to the primacy of Schmidt's work. He relies on the 1926 paper delivered at the International Congress in Amsterdam for his implied connection.

Through analysis of more recent translations of Schmidt and Limperg and with the aid of existing commentaries, this article provides historiographical evidence regarding these claims specifically and sheds more generally light on the ideas of Limperg and Schmidt. We conclude with the suggestion that the so-called modern-day variants of CCA – the value to the owner and the Hyde gearing proposals – are not the result of evolution by developments. They were part of either Limperg's or Schmidt's original prescriptions.

Further, the existence and substance of Schmidt's 1923 article strengthens MacDonald's claim that Schmidt's work not Limperg's work, is the European origin of the theory of replacement cost accounting. Nevertheless, it is far from clear that the work of either has direct theoretical input to the construction of modern CCA proposals.

Patterns and Differences

A *presumption* of a definite pattern runs through many of the commentaries on the development of modern inflation accounting proposals.⁹ Specifically, there is a strong impression that the ideas underlying CCA proposals are thought to be the product of an *evolution*, a process of gradual refinement. The words of the Sandilands Committee are apposite: "CCA was *evolutionary* rather than revolutionary" (Report, 1976, para. 11, emphasis added). Virtually no objection to Sandilands' assertion has been registered. To the contrary some signs of agreement with CCA's evolutionary tag have appeared.¹⁰ There has been little questioning of the appropriateness of that tag which invokes an air of *orderly refinement*, to what *has* been the disjointed, opportunistic nature of successive CCA proposals.

Chaos is used here to describe the uncertainty in the Anglo-American literature regarding claims as to which of Schmidt and Limperg should be credited with property rights in the area. Until recently, in the majority of the comparative analyses of their respective works, the conclusion has been drawn that Limperg's ideas were the genesis of systematic CCA proposals. More than often the origin of CCA in Limperg's work has been alluded to in casual statements!

Name-dropping with respect to Limperg is explicable, for his husbanding of the Dutch *Bedrijfseconomie* movement through the 1920s and into the following decade is part of the folklore of Western European business history. And most importantly, tradition has it that he developed the replacement price system used by Philips Lampfabrieken of Eindhoven. Philips' system survives (in one form or another) for all to observe today.¹¹ Despite the various modifications it appears to have undergone over time, reference to "the Philips system designed by Limperg" is presented as a variety of living proof that replacement price accounting *works*.

Not so explicit in the references to Limperg is an explanation of exactly what his theoretical contribution comprised. Those who indulge that history do not give a clear picture of exactly what Limperg's contribution to the Philips system really was, or how or whether it corresponds in detail with the current cost proposals promoted by, for example, the Sandilands committee in 1975. In fact, there is evidence that some aspects of the Philips system (regarding the treatment of monetary assets) contradicted Limperg's ideas.¹²

Reference has been made in the literature¹³ to the visit by members of the Sandilands Committee to the headquarters of the Nederlands Instituut van Registeraccountants in Amsterdam. It is then presumed that the committee was influenced by the Dutch system and by implication Limpergian thought. But no *specific* aspects of Limperg's ideas are referred to as such in the Sandilands Report. And no evidence is presented to the effect that there was any particular access to "Limperg's ideas" (in contrast with what others suppose to have been his ideas). Nor is it clear how anyone currently could understand exactly what Limperg advocated. For his failure to present his ideas in print in any comprehensive or cohesive fashion leaves a lot to be received as an act of faith. However, in the literature a minority has suggested that the primary position belongs to Schmidt. Not obvious in the invading Anglo-American references to Limperg and Schmidt has been any awareness (or, at least the recognition) of Limperg's bitter criticism of Schmidt's ideas, or of Limperg's unequivocal

declarations that Schmidt's ideas differed from his and thus were irreparably flawed. Most important in this context is Limperg's assertion that Schmidt's ideas were not set in a general theory of the firm as part of a unified economic system. Yet, that is clearly claimed to be an underlying feature of more recent current cost proposals.

Some evidence (other than that given above) of the resulting confusion, is evident in the works of van Seventer, MacDonald and Tweedie and Whittington.¹⁴ It has been exacerbated by a dearth of translated primary source material, particularly in respect of Limperg, for he published nothing in English and "little (of substance) in his native Dutch."¹⁵ Recent translations of Limperg's *Bedrijfseconomie* suggest that in fact "nearly 100 publications flowed from [Limperg's] pen." In that seven-volume collection, however, no bibliography is provided. Although the collection is stated to be a synthesis of his *unpublished manuscripts*, "in the form of detailed lecture notes," if Limperg's published articles had contained substantive and systematically developed ideas then it is unlikely that the editors would have had to state, that prior to Limperg's death in December 1961, "a complete version of his system or theory has never been written," or that "his theories are far less widely known than at first sight would appear to be the case." Van Seventer¹⁶ notes "Limperg has never published a full presentation of his theory... and his writings are limited to a *number* of articles and essays." Another interpretation of the content of these 100 articles is provided by Muis:¹⁷ "[Limperg] was throughout his career, entirely sensitive to criticism, and tended to dismiss rather than counter his critics. Whether from a need for perfection or an unwillingness to commit himself to paper he never published an overview of his main thinking, except for a series of *ad hoc* articles" (emphasis added).

The translations of primary sources used here to examine the antecedents of modern CCA prescriptions impart a sense of order into the literature, by (i) providing new evidence that as early as 1923 the essence of Schmidt's works had been published in Dutch, (ii) highlighting the extent to which the features of modern CCA systems (and their underlying theories) had been developed by the mid-1920s, and (iii) dispelling some myths surrounding the works of Schmidt and Limperg.

Pattern

The idea of entropy, that everything tends to disorder, is not as universal as tradition has us believe. Often pattern and cohesion emerge in what, at first glance, appears unconnected. There is order, or a peculiar *grammar* in most things.¹⁸ In that sense modern versions of CCA might be regarded as the outcome of a long series of events. They might be taken to be proposals emerging in similar economic settings, and the outcome of similar threads of ideas weaving through thought over time. *Bedrijfseconomie* and *Betriebswirtschaft* theories of the 1920s emerged and prospered, gained coherence, during periods of inflation, differing only in intensity from those which spawned the Anglo-American replacement cost proposals of the 1950s and the full-blown Sandilands-type CCA proposals of the 1970s.

It is understandable that deliberate attempts have been made to forge a genetic link between modern CCA and those earlier proposals, especially those attributed to Limperg and the *Dutch system*. And, there can be little doubt that the awareness,

however vague, of that background gave at least moral support to those developing current versions of CCA. In that sense there are connections, there is a pattern.

But such a pattern is not necessarily an *evolution* of the kind alluded to in the Sandilands Report. Nor is it an evolution of the kind which bestows on modern CCA the status of refined technical substance, or the reward of intellectual persistence, or the privilege of survival by virtue of gradually having gained perfection. It is reasonable to infer that the (often throw-away) references to connections between the work of successive scholars grappling with the inflation accounting problem have been intended to create the impression of an integrated development; for example the linking of Limperg with Bonbright,¹⁹ and the linking of Schmidt with Sweeney and with Bonbright, under a supposed pervading influence of Limperg.²⁰

Distinguishing *evolution* from *revolution* has been an enduring posture over the past two centuries by those wanting to drape a particular phenomenon with a mantle of an orderly unrolling of what implicitly existed. Unnatural occurrences, radical departures from what was developing in an orderly manner, have been contrasted as a specialized sense of revolution.²¹

But no such orderly pattern, nor a violent overthrow of an orderly development, has characterized the promotion of modern CCA. And except by allusion and casual, almost careless, reference to the names of Limperg and (less often) to Schmidt, no specific drawing upon the explicit *theories* of either has occurred. Limperg's failure to publish his theories has been noted (for example van Seventer).²² Outside the development of a replacement price system by the Philips Company of Eindhoven, it appears that little recourse could have been had to ideas reasonably attributable to Limperg prior to the edited version of his papers (in Dutch) as *Bedrijfseconomie* in 1964.²³ Any flow-on of ideas, explicit or subliminal, is impossible to identify. Goudekot (1952),²⁴ for example, makes no specific mention of upon which aspects of Limperg's theory of business economics the Philips system drew. Goudekot (1960)²⁵ makes no mention of Limperg at all, nor do Gynther (1966),²⁶ Vos (1970),²⁷ Enthoven (1983)²⁸ or Spinosa Cattela (1983).²⁹ Though it is noted that van Hoepen, et al. (1989, p. 164)^{29a} state that van Der Schroeffer (1969) "gradually developed Limperg's replacement value theory." It ought also be noted that Limperg found imputation of an adjustment for price-level changes oppugnant. Accordingly, modification of Philips' accounting in 1982 to include adjustments of that variety and their presence in ED18, SSAP16, (indirectly) the Hyde proposal, in the proposal of the Richardson Report and the Report of the Ontario Committee, and (for example) in Australia's SAP1, are at odds with what is said to be fundamental to Limpergian thought.³⁰ Over the same period virtually no specific link with Schmidt's work is evident in the literature.

The same is true of the injection of Bonbright's notion of value to the owner into the debate. This is not to deny similarity, even a congruence in some instances, between the ideas and some particular aspects of the proposals of those authors. Nor is it intended to deny the potential for a subliminal infiltration of ideas from the 1920s work of either Limperg or Schmidt, or both; and it does not exclude the possibility of Bonbright's work on the valuation of property having drifted, somehow, into the thoughts of those putting together CCA proposals.³¹ But similarity is not necessarily the outcome of an evolution in its etymological sense. If as appears the

case, evolution is being used as a synonym for *development*, in turn as a synonym for *occurrence*, then every event in the course of history is evolution. The import of using language to describe relationships in history is lost thereby, and we are much the poorer for it.

There may well be a pattern underlying the events from the 1920s in Europe to the 1950s, 1970s, 1980s, and elsewhere. But if it does exist, such a pattern is not what is generally accorded the distinction of being an evolution. There is no evidence of a deliberate, conscious unrolling of what was already there in embryonic form. In fact, in many ways what Schmidt had in place by the mid 1920s was far more refined and consistent than CCA as it currently stands in most of the proposals. Nor can it be claimed that the emergence of CCA has been a revolution; not for the reasons that Sandilands implied, but because there has not been any radical, violent departure from an evolving course of events. It might well be argued that in relation to the *Betriebswirtschaft* movement of the 1920s, modern CCA is more in the nature of a *regression* than an evolution!

Confusion in the Literature

Considerable impediment prevents the forming of unequivocal impressions of interconnections between CCA and the respective works of Limperg and Schmidt. Impediment arises by virtue of the contradictory commentaries on each in the literature. Some of the confusion might be rooted in the strident criticism of Schmidt attributed to Limperg in *Bedrijfseconomie*.³² How intense that criticism actually was and how widely it was disseminated during the 1920s (and after) is, however, unclear. But we might reasonably presume the prominence it has in *Bedrijfseconomie* is at least indicative of the intensity of Limperg's attacks on Schmidt in the course of his teaching and promotion of his own version of business economics. It seems that then, as now (at least as far as Limperg was concerned), ranking Limperg's or Schmidt's expositions in terms of who first presented coherent seeds of the replacement cost or replacement value case has diverted attention from the real substance of their proposals.

But the possible sequence of events does give insight to the pattern referred to above. Van Severen,³³ relying on van der Schroeffer,³⁴ suggested that Limperg "conceptualized his ideas about replacement value as early as 1917–18," thereby pre-dating the first published works of Schmidt. In contrast, MacDonald³⁵ has promoted the new ideas of Schmidt as the antecedents of modern versions of CCA.

It is difficult to obtain evidence either to support or refute van Severen's proposition. In the "Biographical Notes" in *Bedrijfseconomie* (1964) the editors refer to some obscure pre-1920 publications on the topic of commercial dealings, concluding that they did not achieve "the complete development of his business economics." It is explained also that Limperg started to develop his full potential as an economist after his appointment as Professor of Business Economics. His inaugural Professorial Address on May 8, 1922, was titled "Some observations on *cost-price* and the *price-making* processes as problems in business economics" (emphasis added). Nonetheless, it appears that the first published full-length explication of his theory of replacement value accounting, "The consequences of the depreciation of the guilder

for the calculation of value and profit for the enterprise,” appeared in January, 1937.³⁶ In the Anglo-American literature Goudekot (1952)³⁷ was probably the first to acknowledge this article, while van Seventer (1969, 1975),³⁸ Burgert (1972)³⁹ and Ashton (1981)⁴⁰ also refer to it. We draw upon it in the following subsection.

Integrated Income and Capital Concepts

Many have maintained that Limperg’s and Schmidt’s capital and income concepts differed, for example, that in contrast to Schmidt’s theory Limperg proposed an integrated set of concepts. Van Seventer⁴¹ was adamant that Limperg’s was “not a substantialistic” theory and that Limperg’s continuity principle and Schmidt’s “relative maintenance of value concept” differed.⁴² Ashton⁴³ is not so sure, according to his description of Limperg’s theory:

“The income flow of the business was dependent on output which in turn was dependent on the capacity of the enterprise ... [leading him to assume] a permanent income source, the basis of which was a fund of unchanging capital assets. From this he derived the notion that income measures [*sic*] the amount which can be distributed without encroaching on the income source [or fund of capital assets].”

Our translations of Schmidt’s 1923 article and the similarity of ideas in it with, for example Limperg’s 1937 article (both reproduced in translation in Clarke and Dean, 1990),⁴⁴ provide circumstantial evidence against the proposition that their income and capital concepts differed *substantially*. This is supported by a similarity in their notions of replacement cost.

Replacement Cost (Price) or Replacement Value?

Dispute over the supposed difference between Schmidt’s replacement prices and Limperg’s replacement values also has fueled the impression of a substantial theoretical schism between them. In *Bedrijfseconomie*⁴⁵ there is reference to the point made by Mey⁴⁶ that Limperg’s replacement value and Schmidt’s replacement cost concepts differ. The entrenched idea that the differences are significant comes through strongly in the following extracts from Groeneveld et al (1968):⁴⁷

at page 62: “Replacement value is nothing but the quantitative representation of the significance of a good, seen from the point of view of the *sacrifices* which have to be made for its replacement.”⁴⁸

at page 66: “Regarding sacrifices ... it is not a matter of *replacement* but of *substitution* of the same capacity.”

at page 72: “As a matter of principle, the significance of the difference between replacement value and replacement cost should be kept in mind: it being hidden in the varying conditions of the stock and of the market personnel for the price formation of the good which has already been produced and the good which still has to be produced.” (emphasis added)

It is unclear just what Mey perceives to be the differences between *replacement cost* and *replacement value*. His explanations at that point are less than satisfactory

for distinguishing one from the other. This is especially disturbing, bearing in mind that he uses the allusion to those differences as a major point of departure by which to distinguish Limperg's theory of business economics from Schmidt's. Earlier in the same (1966) article Mey had contrasted *outlays (expenditures)*, with costs. The former, he explained, were "derived from cash-based accounting," whereas the latter related to "sacrifices, technically required and economically unavoidable ..." (p. 4). Aggregating the current or replacement values of those factor inputs gave the *value of the product* (p. 5). It seems, according to Mey, that Limperg's notion of replacement value was equivalent to the dollar value of the current factor inputs, including the imputed *value* of administration (pp. 6, 9, 11 & 12). This *integral* unit cost "... measures the replacement value of a product to its producer," he explains (p. 6).

Mey's contrasting of the respective theories of Limperg and Schmidt might be seen in the context of those passages as a distinction between a variety of imputed current factor costs (supposedly Limperg's replacement value) and the actual current cost of replacing the good sold (Schmidt's replacement price).

Such a distinction is worth making if that is what Mey intended. For it does distinguish between the notions of *current cost* and *current value* that Limperg and Schmidt were *perceived* to have been using. But there are problems with that interpretation of the distinction as Mey describes it. Certainly, that interpretation of Limperg's theory of replacement value would give little comfort to those who (more recently) have alluded to his theory to draw support for their own variety of replacement price accounting (viz, CCA). Imputing a factor cost corresponding to Mey's description has not been put of the generic varieties of replacement price (or current cost) proposals which have alluded for theoretical support to what, legend has it, Limperg said. Mey's purpose was to illustrate how Limperg's value was objectively determined by recourse to current prices of those factor inputs as, usually, there are *available market quotations* (p. 15). But imputation of factor costs is likely to involve allocation of common costs, which is almost certain to be highly subjective, no matter how sophisticated one might be in devising the basis (or, in today's idiom, the appropriate *cost-driver*) therefor. It is worth noting at this point that as early as 1923 Schmidt in his Dutch article had suggested the need to include the current costs of all factor inputs, including depreciation of fixed assets.

A further essential objective of Mey's explanation was to illustrate how Schmidt's notion of replacement price entailed the *transfer of the confusion between outlays and values from the past, to the future*, on the grounds that Schmidt's replacement price was an estimate of the future price that would be paid when replacement occurred. That seems at odds with Schmidt's explanation that his organic income calculation would inject the current prices for the goods *sold* and property *consumed* in the production process prevailing at the date of sale; that is, those existing during the *turnover cycle*. That stands in stark contrast with Mey's description and interpretation of *Schmidt's organic theory*. It also appears to accord more with the current cost accounting proposals of the 1970s and 1980s than Limperg's system, at least as Mey explains it.

Conflict between the impressions of what Limperg and Schmidt are deemed to have meant is indicative of the mystery which surrounds their contributions. No

doubt some of the conflict is due to the traditional perceptions that Limperg and Schmidt were miles apart in their thinking. And some of those perceptions must be rooted home to those who authored *Bedrijfseconomie* and reproduced their recollections of Limperg's criticism of Schmidt's work. But the fact remains, the thinness of Limperg's own written explanations of his theory has placed everyone who tries to reconstruct it at a distinct disadvantage.

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doubt some of the conflict is due to the traditional perceptions that Limperg and Schmidt were miles apart in their thinking. And some of those perceptions must be rooted home to those who authored *Bedrijfseconomie* and reproduced their recollections of Limperg's criticism of Schmidt's work. But the fact remains, the thinness of Limperg's own written explanations of his theory has placed everyone who tries to reconstruct it at a distinct disadvantage.

No doubt some of the above was input to Limperg's case that Schmidt was on the wrong track. For, in Limperg's strident criticisms of Schmidt, he was at pains to dispel any belief that his *Bedrijfseconomie* and the German *Betriebswirtschaft* ideas in general, and Schmidt's ideas in particular, were similar. His criticism of Schmidt was reported to have been vehement (*Bedrijfseconomie*).⁴⁹ The editors of *Bedrijfseconomie* lament: (i) that Limperg's *substitution value* has been equated with Schmidt's *substitutionwert* – they refer to the latter as a “yield or profit value;” and (ii) that Limperg has “pursued Schmidt's ideas.” Specifically, they explained:

“This [similarity] school of thought could take root and grow, because of the lack of publication on our side... [we] wish to make it clear that the resemblance is more external than internal... not everyone is adequately acquainted with Schmidt's theory. ... For a correct insight into the sense of Schmidt's theory you need to know the period from which it was formulated. Two aspects are especially important. The theory was developed when German business economists were under the misconception that ideas in their subdiscipline were unrelated to ideas about social or national economics ... [it] was born during times of devaluation in the German currency following the Great War ... [Schmidt's] *substitutionwert* grew outside the [Social Economics] domain and the manner of the development of value theory in economics. ... Schmidt's theory of value begins its existence without any connection with economic theory. ... it is forced upon him because of the circumstance of the time and the urgency of the state of business.” (pp. 222–226).

The view continues in *Bedrijfseconomie*, Volume II (pp. 124–29):

“The most fundamental objection [to Schmidt's ideas] is that a new value concept is introduced incidentally, without it being based on a general value theory or without using it as a basis for a general value theory (p. 125).

“The second fundamental objection is that it is essentially a theory for a time of price-increase and specifically for the period of inflation after the first World War. It is not a sound basis for a period of deflation. Here the incidental nature of the theory shows up very strongly” (p. 125).

“Our third objection against the German views is that the value problem was considered too much – and dealt with too much – as a balance sheet problem. *Schmidt is in this respect one of the least guilty ...*,” (p. 126, emphasis added).

On the contrary, it is reasonable to posit that Schmidt's objective of relative capital maintenance on an economy-wide basis places his organic theory no less in the context of a general theory of business economics, than Limperg's *Bedrijfs-economie*. Limperg's assessment of the generality of Schmidt's theory re-emerged

in the work of van Seventer. Comparing Schmidt's and Limperg's expositions, he concluded:

The [Limpergian] theory does not conclude that there is a requirement that the firm be perpetuated in *permanent* existence, or that the flow of services and purchasing power must be maintained or safeguarded. Neither does the theory follow the teaching of Fritz Schmidt who required the relative function of the business unit in the organic structure of the social economy be maintained." (van Seventer, 1969, p.8, emphasis added).

And again, van Seventer noted in 1975:⁵⁰

"Limperg's theory, placing the economic value theory in the centre of the theoretical framework is not a substantialistic theory like the one developed by Geldmacher, Schmidt and Sommerfeld. The replacement value theory, taken as a whole, differs substantially from the German theorem of *Substanzerhaltung*. Neither Limperg nor any of his followers would subscribe to the premise that the fund of productive resources of the firm – in its size and composition – must be kept intact, irrespective of the purchasing power required therefor."

Recent translations of Schmidt (1923, 1926; in Clarke and Dean, 1990)⁵¹ indicate that Schmidt's replacement cost notions drew on the value theory of the classical economist, Ricardo. This point was either unknown to Limperg and his editors or was conveniently overlooked.

To appreciate fully, and properly place in the order of events, the ideas of Limperg and Schmidt, a brief comparative analysis of the possible influences on their respective ideas as they appeared in published form seems likely to help.

Limperg's and Schmidt's Early Professional Associations

Theodore Limperg Jr.

Little is known in the Anglo-American literature of Limperg's writing, and even less of his professional activities and the potential influences on the development of his ideas. What there is suggests that Limperg was a critic of conventional wisdom. Mey⁵² observes that Limperg would only accept views "logically and empirically defensible." An insight into Limperg's early professional life appeared in the Preface of *Bedrijfseconomie*.⁵³

"Limperg was born in Amsterdam on 21 December 1879 and died in the same city on 6 December 1961. In 1897 he matriculated from the famous school of Raampluin, Amsterdam and a year later acquired a diploma in accounting, which in those days was a qualification of practical value. From the beginning he displayed industry and showed concern for public matters. From 1908 he was a board member of the association of *Houw en Trouw* where he played a useful role in the development of economics training, the training of his younger days. ... As early as 1910 Limperg, as the representative of *Houw en Trouw* at the 9th International

Congress for the Teaching of Commerce, pleaded for the desirability of teaching commerce at tertiary level. ... In 1922 his striving for tertiary education met with success: at the Municipal University in Amsterdam the Faculty of Business Science was founded. ... Limperg has the right to be looked upon as a great systematician, who broke with the business management teaching approach [*bedreijfsleiding Kunstleer*]; and as the builder of a science of business economics. A somewhat similar development took place in the wider area of accountancy. Originally Limperg and a colleague, Volmer [J.G. Ch.] were united in their right against the "old school [of the Institute]", as it was called. To please Volmer, with whom he sided in a conflict with the then board of the Dutch Institute of Accounts, Limperg even had himself expelled as a member of the Institute. This was followed by the formation of the Dutch Accountants' Association, later to merge with the old Institute, but not before it had been established that the new ways of thinking crystallized in [Limperg's] Dutch Accountants' Association, would prevail."

From Mey's account of Limperg's early life one can glean his concern for wide-ranging fields of interest – "a leading personality in the [Dutch] Institute a struggle for legislative regulation of the profession" as well as a "pioneer in the scientific management movement." He "contributed to the development of the study and practice of industrial economics, administrative organization, accounting and auditing" (p. 4).

From Mey's account and other analyses, by Burgert,⁵⁴ van Seventer,⁵⁵ Vos,⁵⁶ van Sloten⁵⁷ and Ashton,⁵⁸ it is obvious that Limperg was a leader and an outstanding thinker of his time. Muis⁵⁹ notes that Limperg's work comprises a "total commitment to system, methodology, to comprehensive in-depth analysis, to clarity of expression." Notwithstanding this, it would not be too harsh to describe Limperg as an enigma. Muis, for instance notes: "The expression is never Limperg wrote, but rather Limperg said, and consequently much of what is attributed to him by later generations may well be apocryphal" (1980, p. 69).

Tweedie and Whittington⁶⁰ refer to the impact of Limperg's work. In commenting on the flexibility accorded accountants in complying with standards enacted in Holland (the Act on Annual Accounts of Enterprises, 1971), they suggest this is due to the pioneering efforts of Limperg: "The discretionary nature of financial reporting practices together with influence of the replacement cost ideas of Limperg has enabled certain leading companies, notably Philips, to adopt replacement cost methods in their financial reports ..." (1984, p. 226). Yet curiously none of the eulogies contain other than but the foggiest of clues as to what exactly his theory was or how that theory might have been transported into practice.

Fritz Julius Schmidt

In contrast, Schmidt's life and ideas appear to be an open book. Schwantag's (1951) article on Schmidt's early professional life, reproduced in translation, in Clarke and Dean (1990)⁶¹ and Clarke and Dean (1986), is most useful. Instructive also is the summary which appeared in the Report of the Second International Accounting Congress in 1926:

“Professor of business administration, born on March 13, 1882 in Wahrenbruck, a district of Halle. He had nine years of practical experience in the retail business, wholesale, manufacturing, bookselling, insurance, overseas import and export; during that time he spent one and a half years in New York and a half a year in Buenos Aires. From 1906 till 1909 he studied at the Leipzig Handelshochschule [School of Economics] and at the Universities of Leipzig and Besançon. Between 1909–1910 he was teacher at the Hoehere Handelsschule [College of Business and Commerce] in Dortmund. From August 1910 until April 1912 he was research assistant, till April 1913 lecturer of business administration and since then professor at the academy and later at the University [of Frankfurt am Main]. Visiting appointments: 1912 Cologne, 1922 Mannheim, 1925 Vienna.”⁶²

As a trained economist, who also taught commerce at the universities of Leipzig and Besançon, it was not unexpected that his writings would exhibit a strong recourse to the current economic thought, particularly marginalism, Irving Fisher’s work on indexation, and an acknowledged indebtedness to Ricardo for his replacement cost notions (Schmidt, 1923, 1926).⁶³ This did not mean that Schmidt unconditionally accepted conventional economic doctrine. The words of Schwantag⁶⁴ are apposite: “The book [*Domestic Payment Transactions*, 1920] is complemented by the description of cash payment transactions [which] are covered and also questions of monetary theory are dealt with. Schmidt’s criticism of the quantity theory of money is put forward here.”

Believing that every business or accounting theory should be consistent with the theory of economic equilibrium, Schmidt consequently intertwined the theory of the firm with *his* theory of accounting. The product he described as organic (1921, pp. 36–7). Specifically his theory was based on the “principle of relative maintenance of value” (*Das Prinzip der relativen Werterhaltung*), necessitating that a firm retain its relative capacity to satisfy customers’ needs, its relative share of the market for its production and its relative overall size in the productive fabric of the economy (for more details see Schwantag, 1951).

Schmidt was one of a number of German academics in the 1920s pursuing the theory of business economics or the theory of the firm. He was recognized as the intellectual leader of theorists advocating an organic theory of the firm (Schrantz, 1930).⁶⁵ But although Schmidt’s work also has received increasing attention recently, examination of its contribution in the Anglo-American literature has been frustrated by language barriers. Accordingly, reference to Schmidt has been restricted primarily to his contributions in *The Accounting Review*⁶⁶ and *The Harvard Business Review*.⁶⁷

In contrast with Limperg, Schmidt’s published contributions are large in number and substantial in content. Apart from his native German his work appeared in Dutch in 1923 (see above), English (1929), and his magnum opus, *Die organische Tageswertilanz*,⁶⁸ was published in Japanese in 1934. Added to this his ideas were exposed internationally at the 2nd International Accountants Congress in Amsterdam in 1926 and the 3rd Congress held in New York in 1929. There can be little doubt that the main features of his works could have been expected to have been known by the leading European business economists of his time. Voigtlaender’s⁶⁹ (1952) bibliography of Schmidt’s works (recently translated into English: Clarke and Dean,

1986,⁷⁰ 1990),⁷¹ attests to the extensive nature and potential accessibility of Schmidt's writings.

It is far more difficult to imagine that Limperg did not have an intimate knowledge of Schmidt's theory, than it is that Schmidt had much beyond a vague glimpse of Limperg's.

Schmidt and Limperg: Similarities and Differences

On the basis of initial translations of key works of Limperg and Schmidt respectively several crucial issues emerge: (i) Limperg's proposition that his and Schmidt's basic ideas differed is open to grave doubt; and (ii) Limperg's harsh criticism of Schmidt for being "incident specific," having only a "balance sheet emphasis" and thus not generating a theory which was "part of a general theory of economic activity," appears to be unjustified.

Certainly there are similarities in their respective theories of business economics. There was unanimity that non-monetary assets were to be recorded at their replacement values; and any increases in replacement "values" or "prices" were not income and therefore should be recorded in a special *capital* account. Their concepts applied in 1920s European idiom, to both *property* and *profit and loss accounting*; and their preferred systems of accounting were part of a wider comprehensive theory of business economics.

Although similarities exist, disparities are evident also. Unlike Schmidt's symmetrical treatment of increases and decreases in replacement prices, Limperg "did not admit to symmetry of capital accretion and impairment."⁷² Schmidt's reasoning, we are told, was "substantialistic" whilst Limperg's was not.⁷³ And whereas adjustments for general price level changes were not part of either Schmidt's or Limperg's mechanism, Schmidt explicitly sought to neutralize general purchasing power changes through the balancing of liquid assets and liabilities (his "identity of values principle," see Schwantag,⁷⁴ and although both described their theory in organic terms, they appear to have had different notions of *organic* accounting in mind.

Similarities and Differences Expanded

Primary sources provide the basis of our analysis, with recourse, initially to Schmidt (1923)⁷⁵ which appeared in Dutch:

"However, if these losses are not fictitious losses, such as occur when the value in the buyers' market goes down, for instance, this might lead to unemployment and production stoppages, which are not justified economically. Based on previous purchase prices, price levels are kept higher than is really necessary and that is the reason why the turnover is smaller than it actually should be. These facts also tell us that this problem not only concerns the entrepreneur; it is also in the national economy's interest that merchants and industrialists calculate correctly, i.e. in a way that eliminates the occurrence of fictitious profits and losses. ... It is a change in capital value, which under all circumstances must be recorded separately

from the turnover figures, in other words, not as *actual profit*. What we showed for the stock also counts for all other elements of the costing price which play a role especially in industry. If the manufacturer of a machine needs 100 hours work the manufacturer wants to be paid for these 100 hours work when he sells the commodity, regardless whether in the meantime, the monetary value of those hours of work has doubled or halved, the physical replacement of labour needs to be considered. Only if the business man thinks this way will he be able to buy another lot of 100 hours of work and continue his production uninterruptedly. Only what is acquired over and above the replacement value is real profit which also can be *distributed*." (p. 303)

"If one wants to end up with a correct profit calculation, any changes in the money value of the dormant capital, arising from a price change, must be recorded separately. When the real assets go up in price, the change must not be processed via the account that indicates the sales profit, i.e. not via the profit-and-loss account, but via a special account, called the adjustment-of-capital account [*rekening voor prijsverschillen*]; that is to say, if one does not want to record the amount directly into the *capital account*, as the general property account." (p. 332)

"Because these things have only slowly dawned upon Germany, most entrepreneurs, because of the strong shifts of all nominal values, have thrown their capital away without realizing, let alone wanting it; the old trading practices made them calculate wrongly and moreover the State with its legislation for the prevention of usury urged them to stick to the old incorrect way of calculating (costs and then prices), even after the entrepreneurs had realized how mistaken they were. Finally, when the mark took its latest plunge [1922/23], even the State had to admit its untenable position and in a new regulation recognized most of the aforementioned principles." (1923, p. 334)

And in a 1926 German article:

"Business profit can only be that which exceeds the amount necessary for the maintenance of a firm's productive assets (p. 384). ... The leading principle of the current value accounting approach is the maintenance of the firm in its real [physical] state ... the firm can only generate a profit if the sales proceeds ... are higher than cost of replacement or reproduction at the date of sale." (p. 407)

Whilst the essence of Limpergian thought (as recorded in Groeneveld et al, Vol. II, 1968⁷⁶) is captured by the following:

"[During the post World War I period in Holland] Shopkeepers, wholesalers and manufacturers offered articles from old stock at a price lower than the purchase price of the goods which they had already in stock from earlier consignments. People were generous to their customers and they even boasted about it because of all the money they made. But when the downturn came many people became victims of the incorrect system. They thought they were rich and consumed an income which, for a great part, consisted only of *fictitious* profit and, as a result, they lacked a buffer to break the drop in price. Because, with the theory of the

replacement value as a basis of economic cost, the most important principle is also connected – namely that profit resulting from a price rise – profit from a boom, therefore – is not to be identified with profit from production. ... In the exchange, profit is made only if and insofar proceeds exceed the higher replacement value.” (p. 120, emphasis added)

The Similarities

- Both employed a physical capital maintenance concept. Although *prima facie* similar, there is the suggestion that Limperg’s continuity principle and Schmidt’s relative maintenance of value concept differed. Van Seventer, for example, argues that whilst Limperg’s “continuity” principle is similar to Chambers’ concept of “adaptive behaviour,” it is in stark contrast to Schmidt’s “substantialistic theory.”⁷⁷ It is a view that Ashton⁷⁸ and we dispute.
- On balance there appear few substantive differences between Schmidt’s *replacement price* and Limperg’s *replacement value*.
- Both attempted to place their theory of accounting in the wider context of a macro- or social economics theory, suggesting that an organic view of the firm should be adopted. It could be inferred that this was the result of a common concern with the ongoing business problem of determining prices which would justify, economically, the continued utilization of an entity’s resources. Managerial problems and the accounting data necessary for their resolution dominate their works.
- Both writers, although having recourse to *current* economic ideas, were not unquestioning in their use thereof. Witness Limperg’s rejection of marginal utility theory and Schmidt’s rejection of the quantity theory of money. In this respect, they were not simply followers, but rather analytical thinkers.
- Examples used, particularly in the 1920s and 1930s articles suggest that the problems and resulting accounting solutions were in respect of single owner, or family-owned concerns in contrast to today’s larger corporate vehicles. Examples often were couched in terms of commodity dealers’ and often plantation owners’ problems, leading either to the inference that their ideas were more applicable to simpler organizational settings, or that a simplified example was devised by both to ensure clarity in expression.
- Both perceived inflation as having measurement implications. Support for this view is found in Muis⁷⁹ and Schwantag.⁸⁰ Schwantag (1951, p. 9, emphasis added), suggests “that Schmidt wants to analyse the substance of the production process of the firm from an economic point of view ... [taking account of] the effects of inflation and falling productivity ... it was obvious that the *measure* of economic figures formerly held to be fixed – the *money unit* – was flexible in reality and that this flexibility had to be taken into account when measuring.” In essence Schmidt’s organic system was a form of stabilized accounting, a point not lost on the American, Henry Sweeney⁸¹ who described Schmidt as “the German authority ... [on] the subject [of stabilization].” Schmidt, in fact, suggested a type of gearing adjustment nearly fifty years before the UK proposal of Godley

and Cripps emerged. Although recognizing a measurement problem, Limperg's and Schmidt's respective responses have, however, led some to suggest that possibly both failed to appreciate the differential effects of price changes and changes in the general level of prices (Zeff,⁸² and Tweedie and Whittington⁸³).

- Both Limperg and Schmidt were "systematic, deductive thinkers" whose premises were taken from their casual observations of business affairs. In this regard their methods of analysis were seminal, at least in Europe (Burgert,⁸⁴ and Schneider.⁸⁵).

The Differences

- Unlike Schmidt's symmetrical treatment of increases and decreases in replacement prices, Limperg "did not admit to symmetry of capital accretion and impairment."⁸⁶ Limperg's suggestion that any holding losses were to be charged to a special reserve account, *rekening voor prijsverschillen*, until the balance has been exhausted, with any residue then to be charged to the profit and loss account, begs the inference that his approach was more pragmatic and certainly less systematic than that of Schmidt.
- Whereas specific accounting adjustments for changes in the general level of prices were not part of either Schmidt's or Limperg's accounting mechanisms, Schmidt explicitly sought to neutralize the effects of any general purchasing power changes through the managerial policy of balancing of liquid assets and liabilities – his "identity of values principle."
- Although adopting similar methods of valuation Limperg qualified his approach, along the lines of what has subsequently been described as the value to the owner method of valuation. Following this approach and in keeping with the now popular interpretation of that line of thinking, the value of any asset is said to be determined in Limperg's own words as:

"The two theories [Limperg's replacement value theory and Schmidt's *Wiederbeschaffungswert* or reproduction value theory] have a different starting-point and only share a small amount of the theoretical argument. The theory I developed is based on the phenomenon that every good has a realization value and a replacement value and that the value of the good is determined by whichever is the lowest of the two, in business usually the replacement value."⁸⁷

- In respect of speculative assets financed with loan capital Schmidt was prepared to modify his income rule that holding gains did not constitute income. Schmidt⁸⁸ is clear on this:

"From the view point of the balance sheet one of the main issues is that of the form of *profit from speculation*. If a speculator, in order to buy real goods which he hopes will increase in value, takes a loan for which he has to pay interest, then his yield consists in *that price increase* which exceeds the *contractual* interest amount. In the case of a deliberate holding of the proceeds in the form of money from the sale of real goods the *profit of the speculator* is the interest on the amount of cash at bank as well as the possible increase in money value. In both cases after the settlement of the business and the distribution

of the profit he has at his disposal the amount of money with which the speculation started. In the first case he can pay back his loan and the principle of maintenance of the firm is thereby observed. *But only the realized speculation profit is distributable.*" (emphasis in original)

Tweedie and Whittington⁸⁹ provide an extended discussion of this aspect of Schmidt's proposal, based on his 1930 article. It is clear that this was an antecedent of the so-called gearing adjustment found in the 1977 UK Hyde Guidelines.

On the question of speculation, Burgert⁹⁰ details Limperg's position. He notes that "the rule about the importance of price valuations is now changed in such a way that only alterations in the value of the normal stock are credited or debited to the revaluation account. Price changes on a surplus or shortage of stock give rise to profits or losses from speculation, which are entered directly into the income statement."

- Although both describe their theories as a form of *organic* accounting, their concepts of the focal organism differ. Schmidt unequivocally viewed businesses, and accounting for businesses, as a part of the wider workings of the economy. The firm was a "cell" within the wider economic system. Limperg's variety of organic accounting appears more related to the organic structure of the particular entity, than to the economy as a whole. Again, if we draw upon Mey⁹¹ for clues as to Limperg's position, it appears that Schmidt's notion of an accounting system driven by a perceived need to maintain the *relative* capital of the entity on an economy-wide basis is firmly rejected. To an extent Mey lampoons the *relative* notion. Whereas Limperg's theory "has its basis in the macro-economic view" (p. 14) with a focus on maintaining the overall level of industrial production, it ... does not imply or prescribe ... [relative maintenance of] the position of a firm within the industrial complex or society;" it is at the option of entrepreneurs to choose their specific positions. Entrepreneurs are free to vary their position, according to Mey; to argue otherwise, he explains, would invite non-commercial action by fiscal authorities to shape the economy.

Some uneasiness with Mey's explanation is justified, for the element of industrial harmony at the macro level which he presents to be underpinning Limperg's ideas distills into integrated action at the micro level. Cooperation and joint action by *individual* firms are necessary, if economic harmony of the kind envisaged is to occur by design and not by chance.

Again, it is difficult to piece together satisfactorily exactly where Limperg stood on such matters. In particular, it is unclear whether the measure of confusion or contradiction which appears to emerge in virtually every description of his ideas are properly attributable to him, or to those trying with hindsight to resurrect his thoughts in such a way as to give them internal coherence. It could be that Limperg, working alone as he is presented to have done, had not refined his theory to that extent. Apparent inconsistencies may be more the product of the accounting *anthropologists* piecing together what they believe to be the pattern of Limperg's ideas, stretching them beyond the actual framework he had in place, than of a failure properly attributable to him.

Conclusion

It is reasonable to expect that when inflation recurs there will again be calls for some form of CCA. Again the accounting profession will be faced with the task of evaluating that system of accounting. An understanding of the contextual frameworks in which its underlying ideas emerged lessens the possibility of CCA being attributable to unwarranted authority and refinement.

With translations of primary sources, this look at the background of modern CCA prescriptions imparts a sense of order into a confused literature, by: (i) bringing forth new evidence, indicating that as early as 1923 the essence of Schmidt's works had been published in Dutch; (ii) highlighting the extent to which the features of modern CCA systems (and their underlying theories) had been developed by the mid-1920s; and (iii) dispelling some myths related to the works of Schmidt and Limperg, in particular casting doubt on the suggestion that modern CCA proposals were the product of an evolutionary development.

Recognition of the existence and the substance of Schmidt's 1923 article adds support for MacDonald's claim that it was Schmidt's work, and not Limperg's, that might be regarded as the true seed of the development of the theory of current value accounting. Our analysis suggests that modified forms of CCA – the value to the owner variant, or the Hyde type containing gearing adjustments – are not the result of evolutionary developments. Rather, those tinkering appeared in some parts of the original versions of either Schmidt or Limperg. The recent re-emergence of such adjustments can be explained as attempts to placate special pleas (from various interest groups). Possibly the pleas have arisen because the pure physical capital maintenance form of CCA provides only a partial solution to the problems of how to account (simultaneously) for changing prices and changing general level of prices.

Analysis of the works of Schmidt and Limperg gives insights which should counsel against permitting unearned historical significance disturbing the course of future inflation accounting debates.

Notes

1. A. Groudek, "Fluctuating Price Levels in Relation to Accounts." *Proceedings, Sixth International Congress of Accountants* (London: Gee & Co., 1952); A. van Severen, "Replacement Value Theory in Modern Dutch Accounts." *International Journal of Accounting Education and Research* (Fall 1975), 67–93.
2. S.A. Zeff, *Asset Appreciation, Business Income and Price-Level Accounting: 1918–1935* (New York: Arno Press, 1976); R. Matessich, "On the Evolution of Inflation Accounting." *Economia Aziendale*, (Vol. 1, No. 3, 1982), 349–381; D Tweedie and G. Whittington, *The Debate on Inflation Accounting*. (Cambridge: Cambridge University Press, 1984); F.L. Clarke and G.W. Dean, "Schmidt's *Betriebswirtschaft* Theory." *Abacus* (September 1986), 65–102 and "Conjectures on the Influence of the 1920s *Betriebswirtschaftslehre* on Sweeney's *Stabilized Accounting*." *Accounting and Business Research* (Autumn 1989), 291–304; F. Graves, "Walter Mahlberg's Valuation Theory: An Anomaly in the Development of Inflation Accounting." *Abacus* (March 1989), 7–25 and "Fritz Schmidt, Henry Sweeney and Stabilised Accounting." *Accounting and Business Research* (Spring 1991), 119–124; and G.W. Dean, F.L. Clarke and F. Graves, *Replacement Costs and Accounting Reform in Post World War I Germany* (New York: Garland Publishing, Inc. 1990).
3. F.L. Clarke and G.W. Dean, "Schmidt's *Betriebswirtschaft* Theory."

4. D. Tweedie and G. Whittington, *The Debate on Inflation Accounting*, 30.
5. E.B. MacDonald, "Postscript." In W. Baxter and S. Davidson (eds), *Studies in Accounting* (London ICAEW, 1977), 246.
6. F.L. Clarke and G.W. Dean, "Schmidt's *Betriebswirtschaft* Theory."
7. The 2nd international Congress was also the venue of Limperg's now famous congress speech of 1926 concerning "The Accountant's Certificate in Connection with the Accountants' Responsibilities" (Groeneveld et al., 1964). It is of interest that this major address did not discuss business economics issues but rather auditing. He did, however, comment on Schmidt's (1926) business profit paper and J.M. Clark's (1926) paper on valuation. In this article extracts are taken from the original German and Dutch versions of Schmidt (1926, 1923 respectively) and Groeneveld et al. (1964, 1968). For the German translations we thank Walter Thanner and Thomas Junge; for the Dutch, Ineke Bergsma. The terminology used and any errors or omissions, of course, remain the responsibility of the authors. The article was originally prepared for the 5th Accounting Historians' Conference in August 1988 and then was drawn from material in a book on Limperg and Schmidt (Clarke and Dean, 1990).
8. F. Schmidt, *Die organische Bilanz in Rahmen der Wirtschaft* (Leipzig: G.A. Gloeckner, 1921 edn., *Die organische Tageswertbilanz*, 1922; 3rd edn., 1929) 54–90.
9. M. Mumford, "The End of a Familiar Inflation Accounting Cycle." *Accounting and Business Research* (Spring 1979), 98–104.
10. G. Whittington, "The British Contribution to Income Theory." In M. Bromwich and A.G. Hopwood (eds), *Essays in British Accounting Research* (London: Pitman, 1981), 1–29; R. Mattessich, "On the Evolution of Inflation Accounting." 349–381; and R. Bloom and A. Debessay, *Inflation Accounting: Reporting of General and Specific Price Changes*. (New York: Praeger, 1984).
11. See, for example, R. Burgert, "Reservations About Replacement Value Accounting in the Netherlands." *Abacus* (December 1972), 111–126 and Spinosa Cattela, "An Introduction into Current Value Accounting and its Application within Philips, N.V." In A.J.H. Enthoven (ed.), *Current Value Accounting: Its Aspects and Impacts* (Dallas: Center for International Accounting Development, 1983).
12. R. Burgert, "Reservations About Replacement Value Accounting in the Netherlands." 122–123.
13. G. Whittington, "The British Contribution to Income Theory." In *Essays in British Accounting Research*.
14. A. van Seventer, "The Continuity Postulate in the Dutch Theory of Business Income." *International Journal of Accounting Education and Research* (Spring 1969), 1–9 and "Replacement Value Theory in Modern Dutch Accounting." (Fall 1975), 67–93; E.B. MacDonald, "Postscript;" and D. Tweedie and G. Whittington, *The Debate on Inflation Accounting*.
15. F.L. Clarke and G.W. Dean, "Schmidt's *Betriebswirtschaft* Theory." 65.
16. A. van Seventer, "The Continuity Postulate in the Dutch Theory of Business Income." 2.
17. J.W. Muis, "Wie war Limperg: Outcast Who Blazed the CCA Trail?" *Accountancy* (October 1980), 69.
18. J. Campbell, *Grammatical Man* (Middlesex: Penguin 1984).
19. K.V. Peasnell, "Technological Change and Other Aspects of the Definition of Replacement Cost for Managerial Purposes" (unpublished working paper, 1982).
20. G. Whittington, "Pioneers of Income Measurement and Price-Level Accounting: A Review Article." *Accounting and Business Research*, (Spring 1980), 232–240; "The British Contribution to Income Theory." In *Essays in British Accounting Research*; "Inflation Accounting: What Next?" In R. Leach and E. Stamp (eds), *British Accounting Standards: The First Ten Years* (London: Woodhead-Faulkner, 1981), 60–84 and F.L. Clarke, *The Tangled Web of Price Variation Accounting* (New York: Garland Publishing, Inc. 1982).
21. R. Williams, *Keywords: A Vocabulary of Culture and Society* (London: Flamingo, 1981), 122.
22. A. van Seventer, "The Continuity Postulate in the Dutch Theory of Business Income;" J.W. Muis, "Wie war Limperg: Outcast Who Blazed the CCA Trail?" 69–70; P.J. van Sloten, *The Dutch Contribution to Replacement Value Accounting: Theory and Practice* (Lancaster: International Centre for Research in Accounting, University of Lancaster, 1981) and R.K. Ashton, *The Use and Extent of Replacement Value in the Netherlands* (London: ICAEW, 1981).
23. G.I. Groeneveld et al., *Bedrijfseconomie: verzameld werk van Prof. Dr Th. Limperg jr.* (Deventer: E.E. Kluwer, Vol. I, 1964).
24. A. Goudekot, "Fluctuating Price Levels in Relation to Accounts."
25. A. Goudekot, "An Application of Replacement Value Accounting." *Journal of Accountancy* (July 1960), 37–47.
26. R.R. Gynther, *Accounting for Price Level Changes: Theory and Procedures* (Sydney: Pergamon Press 1966).
27. J. Vos, "Replacement Value Accounting." *Abacus* (December 1970), 132–143.
28. A.J.H. Enthoven, *Current Value Accounting: Its Aspects and Impacts* (Dallas: Center for International Accounting Development, 1983).

29. R. Spinoso Cattela, "An Introduction into Current Value Accounting and its Application within Philips, N.V."
- 29a. M.A. van Hoepen, I.J. Lambrechts and F.J. Mostert, "The Gearing Adjustment in Inflation Accounting: The Financing Sequence Assumption." *South African Journal of Business Management* (1989, Vol. 20, No. 3.) 163–167; referring to H.J. Van der Schroeff, "Winst bepaling en financieringsstructuur." *Maanblad voor Accountancy en bedrijfshuishoudkunde?* (Vol. 43, February 1969), 50–72.
30. A. van Severter, "Replacement Value Theory in Modern Dutch Accounting," 88.
31. F.L. Clarke, *The Tangled Web of Price Variation Accounting*.
32. G.J. Groeneveld et al., *Bedrijfseconomie: verzameld werk van Prof. Dr Th. Limperg jr.* Vol I, 1964 and Vol II, 1968.
33. A. van Severter, "Replacement Value Theory in Modern Dutch Accounting," 68.
34. H.J. van der Schroeff, "Limperg's Theorie van de Vervangingswaarde." *Maanblad voor Accountancy en bedrijfshuishoudkunde?* (December 1959), 558.
35. E.B. MacDonald, "Postscript," 246.
36. Van Severter (1975), p. 72, f/n 13) refers to this 1937 publication, "De gevolgen van de depreciatie van den gulden voor de berekening van waarde en winst," as a reprint of a lecture given at Nederlandsch Instituut van Accountants, November 7, 1936. Subsequently it appeared in *Maanblad voor Accountancy en bedrijfshuishoudkunde*, January 1937, 14–31 and is reproduced, in translation, in Clarke and Dean (1990), 55–71.
37. A. Goudekot, "Fluctuating Price Levels in Relation to Accounts."
38. A. van Severter, "The Continuity Postulate in the Dutch Theory of Business Income" and "Replacement Value Theory in Modern Dutch Accounting."
39. R. Burgert, "Reservations About Replacement Value Accounting in the Netherlands."
40. R.K. Ashton, *The Use and Extent of Replacement Value in the Netherlands*.
41. A. van Severter, "Replacement Value Theory in Modern Dutch Accounting," 74–75.
42. A. van Severter, "The Continuity Postulate in the Dutch Theory of Business Income," 8.
43. R.K. Ashton, *The Use and Extent of Replacement Value in the Netherlands*, 17.
44. F.L. Clarke and G.W. Dean, *Contributions of Limperg and Schmidt to the Replacement Cost Debate in the 1920s* (New York: Garland Publishing, Inc. 1990).
45. G.I. Groeneveld et al., *Bedrijfseconomie: verzameld werk van Prof. Dr. Th. Limperg jr.* Vol I, 1964 and Vol II, 1968.
46. A. Mey "Theodore Limperg and his Theory of Costs and Values." *Abacus* (September 1966), 14–15 and R. Bloom and A. Debessay, *Inflation Accounting: Reporting of General and Specific Price Changes* (New York: Praeger, 1984), 138.
47. G.I. Groeneveld et al., *Bedrijfseconomie: verzameld werk van Prof. Dr. Th. Limperg jr.*, Vol II, 1968.
48. The same definition of replacement value appeared even in Limperg (1937).
49. G.I. Groeneveld et al., *Bedrijfseconomie: verzameld werk van Prof. Dr. Th. Limperg jr.*, Vol. I, 1964 and Vol. II, 1968.
50. A. van Severter, "Replacement Value Theory in Modern Dutch Accounting," 73–74.
51. F.L. Clarke and G.W. Dean, *Contributions of Limperg and Schmidt to the Replacement Cost Debate in the 1920s*.
52. A. Mey, "Theodore Limperg and his Theory of Costs and Values," 3.
53. G.I. Groeneveld et al., *Bedrijfseconomie: verzameld werk van Prof. Dr. Th. Limperg jr.*, Vol I, 1964.
54. R. Burgert, "Reservations About Replacement Value Accounting in the Netherlands."
55. A. van Severter, "The Continuity Postulate in the Dutch Theory of Business Income," and "Replacement Value Theory in Modern Dutch Accounting,"
56. J. Vos, "Replacement Value Accounting."
57. P.J. van Sloten, *The Dutch Contribution to Replacement Value Accounting: Theory and Practice*.
58. R.K. Ashton, *The Use and Extent of Replacement Value in the Netherlands*.
59. J.W. Muis, "Wie war Limperg: Outcast Who Blazed the CCA Trail?" 70.
60. Tweedie and G. Whittington, *The Debate on Inflation Accounting*.
61. F.L. Clarke and G.W. Dean, *Contributions of Limperg and Schmidt to the Replacement Cost Debate in the 1920s.*, 177–193 and F.L. Clarke and G.W. Dean, "Schmidt's Betriebswirtschaft Theory."
62. This is a translation from the original German contained in the *Proceedings, Het Internationaal Accountantscongres* (1926), p. 379.
63. F. Schmidt, "De winst van de onderneming." *De naamloze vennootschap roermond* February 15 and March 15, 1923, 301–304 and 332–334 and "Profit and Balance Sheet Value," 378–436, *Proceedings, Het Internationaal Accountantscongres* (Purmerend: J. Muuses, 1926, republished New York: Arno Press, 1980).
64. K. Schwantag, "Fritz Schmidts wissenschaftliches Werk." *Zeitschrift für Betriebswirtschaft* (January 1951), 1–9.

65. A. Schranz, "Modern German Accountancy." *The Accounting Review* (June 1930), 165–167.
66. F. Schmidt, "The Importance of Replacement Value." *The Accounting Review* (September 1930), 235–242 and "Is Appreciation Profit?" *The Accounting Review* (September 1931), 289–293.
67. F. Schmidt, "The Basis of Depreciation Charges." *Harvard Business Review* (April 1930), 257–264.
68. F. Schmidt, *Die organische Bilanz in Rahmen der Wirtschaft* (Leipzig: G.A. Gloeckner, 1921; 2nd edn., *Die organische Tageswertbilanz*, 1922; 3rd edn., 1929).
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The Relationship of Financial and Tax Accounting in Germany: A Major Reason for Accounting Disharmony in Europe

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Key words: Commercial accounting; Tax accounting; European accounting harmonization; German accounting concepts

Abstract: *One of the main characteristics of German accounting is the interaction of financial accounting and tax accounting. The so-called “Massgeblichkeitsprinzip,” the “principle of congruency,” traditionally has influenced German accounting and also the transformation of the 4th EEC Directive into German law. This principle and especially its influence on financial accounting must be recognized in analysing German financial statements to understand and interpret their content and to compare them with other countries within the EEC. This fact of the interaction of financial and tax income computation is one of the main reasons for the lack of harmony in accounting between Germany and other countries in the EEC. It is a very suitable example to recognize that the international differences in accounting are not only caused by different norms and regulations but by contextual differences and different frameworks. The aim of the paper is to illustrate the degree to which taxation regulations determine financial reporting in Germany. It should promote understanding of financial accounting in Germany and to demonstrates the direct and indirect effects of this “Massgeblichkeitsprinzip.”*

Research in international accounting has shown that the reason for the lack of international comparability of financial statements is not primarily the specific accounting regulations of the countries but the different basic conceptions and functions of accounting. A typical example of this is the close relationship between financial accounting and accounting for tax purposes in Germany. This relationship, the so-called “Massgeblichkeitsprinzip” – here translated as the principle of congruency¹ – is one of the main accounting principles in Germany and has a strong influence on its accounting regulations and accounting practice. Although there is interaction

between tax and financial accounting in other countries also (for example, France, Italy and Belgium), the German situation is, with regard to the intensity, the role, and the closeness of interdependence, a special one.²

During recent years, the principle of congruency has been strongly criticized by academics.³ Nevertheless it is more important and has a stronger impact on accounting today than ever before. The German legislature did not want to take the chance of separating the two accounting schemes by the transformation of the 4th Directive of the European Economic Community (EEC) into German commercial law, which would have increased harmonization in accounting in Europe. On the contrary, after the transformation of the Directive into German law and the most recent German tax law reform in 1990, the interaction of financial commercial accounting and tax accounting in Germany has become very close.

The “Massgeblichkeitsprinzip” has a long tradition. It was in 1874 in Bremen and Sachsen – in those days the states (“Länder”) had the authority to impose taxes – when the first tax law of a state referred to the income of the commercial accounts as a tax computation base. In 1920 this concept of income taxation became part of the Income Tax Code of the German Reich. In 1934 the “Massgeblichkeitsprinzip” was already expressed in the German Tax Code, the Einkommensteuergesetz (EStG), in nearly the same manner as it is today.⁴

Definition and Structure of the “Massgeblichkeitsprinzip”

The German tax law requires the determination of taxable income by comparing the net assets of a firm at the beginning and the end of the fiscal year. For this reason companies (except very small ones) must prepare a special balance sheet for tax purposes (Steuerbilanz) to compute taxable income. In calculating a company's profit, German tax authorities are more concerned with the balance sheet than with the income statement. This special balance sheet must be prepared in accordance with the tax regulations. The basic section which deals with the computation of taxable income of a firm and which is the source of the principle of congruency is Sec. 5 EStG. It states that for asset comparison and income computation in the tax accounts the generally accepted commercial accounting principles are binding. This Section is usually interpreted to mean that the recognition and the valuation of the assets and liabilities in the tax balance sheet must be in accordance not only with the regulations of German commercial law but also with the concrete reporting in the commercial accounts of a specific firm. In other words, the recognition and valuation of the commercial accounts must, in general, be incorporated into the tax balance sheet. Thus the substantive basis to prepare a tax balance sheet is the published financial balance sheet (Handelsbilanz) of the company.

Only for some specific items and circumstances does the tax law require specific accounting treatment which differs from commercial accounting regulations. The reason for this is to attain an acceptable degree of objectivity for the taxable income computation, and in this way to guarantee the equity of income taxation. These exceptions to the “Massgeblichkeitsprinzip” apply to some recognition and valuation options in German commercial accounting which allow the company to choose

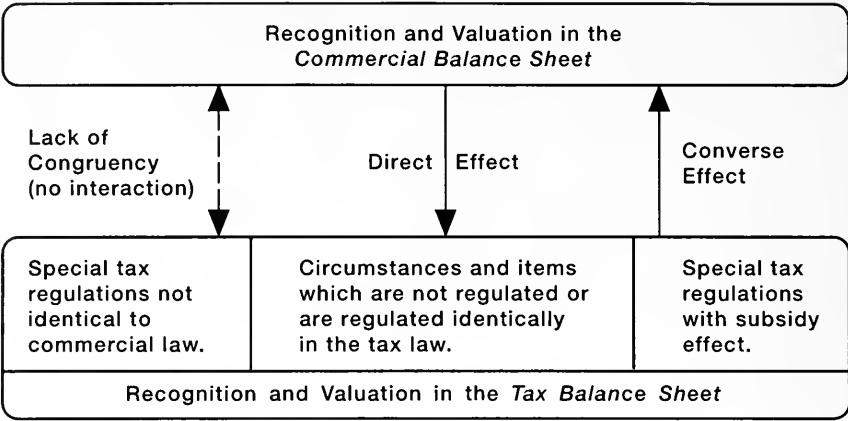


Fig. 1. Scope and effect of the principle of congruency.

alternative accounting treatments for one specific circumstance in its financial balance sheet. Most of these exceptions are the result of decisions of the highest tax court (Bundesfinanzhof). The main departures from commercial accounting are in the areas of recognition options and depreciation. In general, all commercial recognition options which refer to assets are recognition requirements in the tax balance sheet and all commercial recognition options which refer to liabilities are not allowed for tax purposes.⁵ There is only one main exception to this general rule, namely the commercial recognition option of the “organizational start up and business expansion expenses” (Sec. 269 Handelsgesetzbuch⁶). As a so-called “Bilanzierungshilfe” (these are special accruals which are not regarded as “assets” in the German sense), their recognition is not allowed in the tax accounts. In summary it can be stated that there are no recognition options in the tax balance sheet.

In addition to the recognition differences, German tax law differs from commercial law in that it contains a number of strict depreciation requirements. For example the depreciation period of goodwill acquired in an asset transaction must be 15 years and the maximum percentage of the declining depreciation method is 30 percent. All these stricter requirements of the tax law have as their objective the reduction of the possibility of accounting policy and income manipulation in the tax accounts. In all areas where there are strict and specific tax requirements, the principle of congruency has no effect and, therefore, the financial accounts can differ from the tax accounts.

Nevertheless, these special tax requirements are only exceptions to the “Massgeblichkeitsprinzip.” As a result of the wide range of accounting options, there are many possibilities for the company intentionally to influence taxable income.

The “Massgeblichkeitsprinzip” embodies not only the influence of commercial law and financial accounting practice on income tax computation but also a converse effect, so that special tax accounting rules have a specific impact on commercial accounting. There are a variety of tax benefits in the form of higher write-downs,

special tax depreciation allowances (“steuerliche Sonderabschreibungen”), and tax-free reserves (“steuerfreie Rücklagen”) which can be adopted by the German taxpayer to reduce the taxable income of a period. These are all instruments of the economic and financial policy of the government with the objective to support specific regions or branches (for example, tax benefits for companies in the former GDR). In Sec. 5 Para. 1 S. 2 EStG the Tax Code states that these special income-reducing tax valuations must be applied equally in the commercial accounts to be allowed for tax computation. Thus every tax-allowed special depreciation also affects the published commercial balance sheet. Because these valuations do not refer to the “real” economic value (whatever this might be specifically) of the assets, which should be included in the commercial accounts, there are special provisions in German commercial law which allow these – economically spoken – “false” values to be included in the commercial accounts (Secs. 254, 279 Para. 2, 280 Para. 2 HGB). This direct impact of the tax law on financial accounting is called the “umgekehrtes Massgeblichkeitsprinzip” (principle of converse congruency). It is a logical consequence of the aim of the tax authorities to achieve a consistent and close relationship between tax and commercial income computation.

In summary, the “Massgeblichkeitsprinzip” states that balance sheet items and their valuation must be identical in the financial statements and the tax statements, except for those special recognitions and valuations which are excluded by special tax regulations. All of the valuation options in the tax law are dependent on their use in the published accounts. For this reason, the “Massgeblichkeitsprinzip” is called the “cornerstone” of tax accounting in Germany.⁷ Consequently, the profit reported in the published accounts of a German company usually do not differ significantly from those in the tax accounts.

Finally it can be stated that the principle of congruency in Germany has three characteristics:

- (1) Basically, the recognition and the valuation of assets and liabilities in the commercial financial statement is also legally required for the taxable income computation.
- (2) For some items, specific and strict tax regulations require a special treatment in the tax accounts.
- (3) Tax benefits in the form of special depreciation allowances and tax-free reserves are only allowed if they are also exercised in the commercial financial accounts (principle of converse congruency).

The Reasoning of the “Massgeblichkeitsprinzip”

The substantive reason for this very close interaction between the commercial and the tax income computation is the historical evolution of the concept and the functions of accounting in Germany. The determination and the presentation of the assets of a company, the function of which is to protect the claims of the creditors, are traditionally the central objectives of financial accounting in Germany. The commercial asset

presentation recognizes that the company must fulfill its obligations (liabilities) on the one hand and should remain a going concern on the other. This view has a very strong influence (even after the implementation of the 4th EEC Directive) on the recognition and valuation of balance sheet items and is manifested in the dominant principle of prudence ("conservatism"), the so-called "Vorsichtsprinzip." Related to this, the commercial balance sheet is seen as an instrument to compute prudently the income of the company, which can be given to the owners (as dividends) without deteriorating or harming the position of the creditors. Thus the main function of the balance sheet in Germany is the computation of the distributable income of a company in determining the prudently valued increase of net assets to prevent the overstatement of net assets and income. The objective of providing relevant information and the accrual convention are subordinated to this function of the prudent determination of net assets. This fact must be viewed as one of the basic differences between the Anglo-American and the German accounting concept.⁸

This interpretation of financial accounting is similar to the income computation for tax purposes. The measure of income taxation is the full economic capacity of a corporation. In the opinion of the German tax authorities, as already mentioned, the income computed by the comparison of net assets at the beginning and the end of a period is an adequate indicator of this taxable measure. In addition the taxation should be reliable and equal, thus the income computation must be based on objective and generally accepted principles. Traditionally the principles of proper bookkeeping and accounting, the norms of financial accounting, have been regarded by the German tax authorities as adequate for this goal of reliable income computation. This attitude should first and foremost be seen as a legislative simplification which allowed the legislator not to create a complete set of tax accounting rules and a tax-specific definition of income. Additionally, as a result, this is to the advantage of the companies, as the taxation (because of the principle of conservatism) is based on a moderately computed income, which reduces the tax payments.⁹

The reason why the German tax authorities have required the reverse impact of undervaluing tax rules on the published accounts is the reduction of distributable commercial income. Because of the special tax valuation (low), the tax authorities receive less of the companies' income in the form of income taxes. Because of this disclaimer on the part of the tax authorities, in a sense of fairness, the owners also should disclaim a part of their income. Thus the distributable income must be reduced in the commercial accounts.

The major argument mentioned to justify the "Massgeblichkeitsprinzip" is the fact that the firms have the opportunity to prepare only one set of financial statements for both purposes (commercial and tax), which is more practical and economical. This argument is supported by observed accounting practice. Statistics prove that most of the enterprises (for example, more than 90 percent of the limited liability companies), prepare only one set of financial statements, which is called the "unified balance sheet" (Einheitsbilanz).¹⁰ Only the listed companies generally prepare two sets of statements. Their reason for this is to take advantage of commercial accounting options concerning items which are regulated by specific and strict tax norms and therefore have no tax effect when they are exercised in the commercial accounts. These companies try to achieve different accounting policies in the different accounting

systems and to publish commercial accounts which are, as far as possible according to the tax law, not totally “falsified” by tax-motivated values.

In summary, the basic objective of the principle of congruency and its converse effect is to represent economic items identically in both balance sheets as far as possible. The main reason for this has been simplification for the tax legislator and the practical and economical advantage for the companies to have the possibility of preparing only one set of accounts.

Effects of the “Massgeblichkeitsprinzip”

The illustration in Fig. 2 shows that there are direct and indirect effects of the close interaction between the accounts for tax and for commercial purposes.

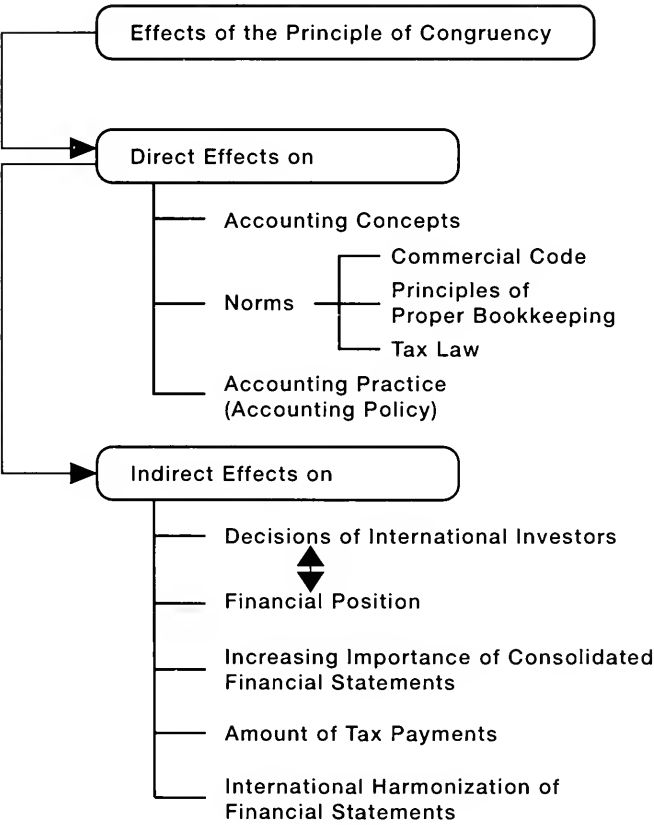


Fig. 2. Effects of the principle of congruency.

Direct Effects of the “Massgeblichkeitsprinzip”

The close interdependence of financial and tax accounting influences to a large extent the concepts of the balance sheet in Germany. It is one reason why the German balance sheet has been and still is seen as an instrument to determine prudently the income distributable to the owners. The balance sheet therefore is the basic and main financial statement in comparing the net assets. Financial accounting in Germany is based on the presentation of assets measured by their historical costs. That is the reason why it is called a static concept of financial accounting. In addition to its influence on the concepts of financial accounting the principle of congruency had and still has a strong impact on commercial and tax accounting principles, rules, and regulations.

Impact on Tax Law

Because of the general reference in Sec. 5 EStG to the principles and rules of commercial accounting, the Tax Code does not embody many accounting regulations. The major areas of special tax accounting regulations are depreciation and write-offs. But these are only exceptions to the general rule of tax accounting being tied to commercial accounts.

This general reference causes judicial rulings to play a very important role in establishing tax accounting principles because the tax courts must interpret commercial accounting principles in deciding doubtful cases. The main decisions are the basis for the Einkommensteuerrichtlinien (EStR), the income tax directives which are binding for the tax authorities and agents in judging specific income computation problems. The main exception to the principle of congruency is based on a decision of the Great Senat of the “Bundesfinanzhof” in 1969, when it ruled that assets with the option of recognition in commercial law must be capitalized in the tax balance sheet and accruals with the option of recognition in commercial law are not allowed to be recognized in the tax balance sheet. This general tax accounting rule still has legal force.¹¹

As a result of this decision, two items (in contrast to the commercial law) must be capitalized in the tax balance sheet:

The difference between the amount to be repaid on a debt and its value when issued (“Disagio”) (Sec. 250 Para. 3 HGB);

The goodwill acquired by an asset merger (“derivativer Firmenwert”) (Sec. 255 Para 4 HGB).

An option exists in the commercial code to recognize some accruals (“Aufwandsrückstellungen”) which are not based on liabilities to other persons, these are:

Accruals for repairs and maintenance expenses, if the repairs and maintenance are performed after the first three months of the following year but within the following financial year (Sec. 249 Para. 1 HGB) (“Rückstellungen für Instandhaltung”);

Precisely determined accruals (Sec. 249 Para 2. HGB) (“spezielle Aufwandsrückstellungen”).

These accruals are not allowed to be included in the tax balance sheet.

Not covered by this general rule are the so-called “Bilanzierungshilfen,” items which are not regarded as assets but can nevertheless be capitalized in the commercial balance sheet. These are, as already mentioned, “organizational start-up and business expansion expenses” (Sec. 269 HGB) and “deferred tax assets” (Sec. 274 HGB). They are not allowed to be capitalized in the tax balance sheet. All of these stricter rulings in tax accounting are aimed at avoiding accounting options, to restrict tax accounting policy, and to cause the income computation to be more objective.

Impact on Commercial Law

Codified Regulations. In Germany all groups concerned, the political parties and the Government, have agreed that in implementing the EEC Directives¹² an increase in the tax burden on the firms must be avoided in all circumstances. This attitude of a taxation-neutral implementation of the EEC accounting rules had a very substantial impact on the transformation of the Directives into German law because of the existence of the “Massgeblichkeitsprinzip,” which (as a sacred cow) has not been changed or even restricted by the legislator. Consequently, there was the strong intention to change the accounting principles as little as possible in implementing the Directives, because nearly all changes would have had an influence on the tax computation.

Thus the principle of congruency was the main reason for the very conservative transformation of the 4th Directive in Germany. This effect becomes very clear especially with regard to the “true and fair view” principle which has been interpreted in Germany in a quite different and much weaker manner than, for example, in Great Britain.¹³ The basic codified objective of commercial accounting is not (as it should be according to the 4th Directive) the presentation of the “true and fair view” but, as it was before the transformation of the Directives, conformity with the regulations and the principles of proper bookkeeping, the so-called “Grundsätze ordnungsmäßiger Buchführung” (GoB). The German Commercial Code requires that financial statements must be prepared comprehensively and clearly within required recognition and valuation principles and must give a clear and “legally” correct view of the financial position and the earnings of the company. According to the German legislator and the general opinion of accountants, the “true and fair view” does not influence the income computation but the information given in the notes to the financial statements. The notes should comply with the principle of a true and fair view in giving information in excess of the balance sheet and profit and loss account. Having no direct impact on the items and the valuation in the commercial balance sheet, the “true and fair view” has no influence on the taxable income computation.¹⁴

This very restrictive interpretation of the true and fair view principle was necessary to comply with the objective of the tax-neutral transformation of the EEC Directives. According to the legislator, it has the advantage of reliability and objectivity in commercial accounting (and due to the principle of congruency also in tax accounting) because the presentation of an item in the balance sheet does not depend on individual specific case decisions. Additionally a consequent transformation of the principle of a true and fair view in the British sense into German law would have meant the end of the strict principle of congruency because the two principles are in a conflicting relationship.

The conflict arises because the congruency principle values enter into the commercial accounts, which are only motivated by tax considerations and do not comply with the "fair" presentation of the economic situation of a firm. For example the tax-motivated charge of accelerated depreciation allowances against profit is not "fair," but it is certainly "correct" or "legal."¹⁵

The following points are examples of the lack of compliance with the true and fair view concept in German financial accounting caused mainly by the "Massgeblichkeitsprinzip:"

Prohibition of the valuation with present values (a valuation which would be possible according to Art. 33 of the 4th Directive).

Prohibition of the valuation of investments at equity amounts in the corporate financial statements (a valuation which would be possible according to Art. 59 of the 4th Directive).

Prohibition of the capitalization of research and development costs (which would be possible according to Art. 37 and Art. 34 of the 4th Directive).

Application of tax-allowed depreciation: According to Sec. 254, 279 Para. 2 HGB, undervaluing the assets in the commercial accounts to take advantage of depreciation options of the tax law is allowed.

Nullification of the write-up requirement of the 4th Directive: According to Sec. 280 Para. 2 HGB, asset values need not be written up, if the write-up in the commercial balance sheet causes a write-up in the tax balance sheet which leads to a higher taxable income. Because of the principle of congruency, this inter-relationship always exists. Thus the write-up requirement of the Directive is effectively turned into a write-up option in German financial accounting.

Special item with an equity portion: It is allowable to create a special item, "Sonderposten mit Rücklageanteil," in the German commercial balance sheet, between the owners' equity and the liabilities sections, to benefit from tax-free reserves. This type of reserve is permitted in German tax accounting to transfer hidden reserves of assets leaving the company to new assets which will be purchased in the near future. These special items are necessary because of the required "umgekehrtes Massgeblichkeitsprinzip" (converse congruency principle) in tax law. Their recognition leads to a reduction of commercial income which is not in compliance with the 4th Directive.

Little importance of deferred taxes: The close connection between taxable and commercial income has as a result that companies do not show a large difference in the profit disclosed in the published accounts as compared with those prepared for tax purposes. Thus in German companies the amount of deferred taxes is quite small compared, for example, to those in Great Britain. There are usually deferred tax assets which according to Sec. 274 HGB need not be recognized. Companies that prepare only one set of financial statements (unified balance sheet) logically do not show any deferred taxes in their balance sheets.

In accordance with the provisions of the 4th Directive (Art. 35 Para. 1d; Art. 39 Para. 1e; Art. 43 Para. 1 No. 10), the German legislator has tried to reduce the impairment of the information content of the commercial balance sheet and profit

and loss account caused by the principle of congruency. Thus if a company has adopted higher depreciation allowed by the tax code in its financial statements, there is an option to show a special item with an equity portion on the capital side of the commercial balance sheet (“Sonderposten mit Rücklageanteil”) in the amount of the difference between the valuation deemed admissible for tax purposes and the correct commercial valuation (thus the so-called “special item with an equity portion” in a German balance sheet can comprise tax-free reserves and portions of tax-motivated higher depreciation allowances). In this way the depreciated asset is represented with its “real commercial book value” in the balance sheet. As for the true and fair view principle and the information content of the balance sheet, it is a pity that companies are not obliged by the legislator to report higher tax depreciation in this way. Statistics show that less than one quarter of the German companies choose this specific representation of tax-motivated depreciation in the special financial balance sheet position.¹⁶

As already mentioned, the notes to the financial statements have the function to give adequate information to help to present a true and fair view of the situation of the firm and to comply with the requirements of the 4th Directive. Therefore, the amount of write-ups not made in the financial year for tax reasons shall be mentioned in the notes and appropriately justified (Sec. 280 Para. 3 HGB). The same must be done with the amount of depreciation charged in the financial year based solely on tax provisions, separately for fixed and current assets. Furthermore, income from the reversal of special items with an equity portion or transfers to those items shall be noted separately in the profit and loss account or mentioned in the notes (Sec. 281 Para. 2 HGB). Additionally there shall further be disclosed in the notes the extent to which the results of the year were influenced by depreciation or write-ups of assets not made in the financial year or in earlier years, which were based on tax regulations (Sec. 285 No. 5 HGB).

These disclosures in the notes cannot totally cure the information distortion caused by the “Massgeblichkeitsprinzip,” on the one hand, because of the fact that the information in the notes has no material influence on the result of the balance sheet, the commercial income; on the other hand, the experience gained in recent years shows clearly that the companies only interpret these disclosure rules in their minimal sense. The information usually given on the influence of the principle of congruency on the commercial accounts is very short and often incomprehensible for interested parties, especially those with no profound knowledge of German tax law.

Principles of Proper Bookkeeping. The impact of the “Massgeblichkeitsprinzip” on the principles of proper bookkeeping, GoB, is dual. First, there is the impact of the tax courts on the interpretation of the GoB because there are many more tax lawsuits than commercial ones. It is mainly the tax courts that must interpret these commercial accounting principles and decide whether an accounting method is in conformity with the GoB and can be accepted as proper accounting. This results in a strong influence of tax accounting assumptions on the German concepts of commercial accounting.

On the other hand, many tax accounting principles, primarily to simplify accounting problems and to increase the practicability of accounting, are meanwhile practiced to such an extent that they can be called generally accepted in financial accounting.

Examples of these simplifications are the computation of the depreciation of an asset in the year of purchase (a purchase date in the first half of the financial year leads to a full depreciation allowance; a purchase date in the second half of the financial year leads to a half depreciation allowance) or the full depreciation for assets under 800 DM in the purchase year (Art. 44 Para 2 EStR, Sec. 6 Para 2 EStG).

Impact on Accounting Practice (Accounting Policy)

Because of the "Massgeblichkeitsprinzip" the two balance sheets (tax and commercial) are very closely linked. This has a strong impact on accounting policy decisions of a firm. In most cases, the decision reported in the commercial balance sheet is binding for the tax balance sheet and vice versa. This results in a very characteristic situation for German accounting with companies often having to deal with conflicting aims. A desired high income in the commercial accounts leads to higher tax payments, and the realization of the aim to minimize taxable income, on the other hand, decreases commercial income. Usually the minimization of tax payments is the primary goal and the more compelling argument in accounting-policy decision making in German companies. It can generally be said that tax accounting dominates commercial accounting. Taxpayers who want to take advantage of a low valuation of assets in the tax balance sheet must choose the same low-valuation accounting methods for the commercial accounts. In addition, companies which prepare only a unified balance sheet, one balance sheet for both purposes, must disclaim the recognition and valuation options given in the Commercial Code (HGB) which are not covered by tax law. The principle of congruency stimulates a desire to create hidden reserves. The undervaluation of assets for tax reasons tends to lead to a more pessimistic presentation of the financial position and economic situation of a company than the very strong principle of prudence already does.⁴⁷

Indirect Effects of the "Massgeblichkeitsprinzip"

Decisions of International Investors

As demonstrated, the "Massgeblichkeitsprinzip" is one of the major reasons for undervaluation practices in German financial accounting. The actual value of the assets, the financial position, and the profitability of a company are represented in a very conservative way. Investors can not easily interpret the correct financial and economic situation of a company. Furthermore, the distributable income of a company is smaller, which means that the owners tend to receive less cash in the form of dividends than in countries without this particular interaction of tax and financial accounting. This can be seen as one main reason why international investors are restrained in their equity investments in German companies. The result is the relatively small portion of owners' equity of German stock corporations and limited liability companies, which is on average less than 20 percent of the total capital. Generally speaking, the principle of congruency is a disadvantage for German companies competing in the international capital markets.

Increasing Importance of Consolidated Financial Statements

In Germany the consolidated accounts only have the function of giving relevant information to interested parties. Neither dividends nor tax payments are dependent on the results of the consolidated statements. Therefore the influence of the principle of congruency on the consolidated accounts is much less because the Commercial Code gives the opportunity to represent the consolidated financial statements without consideration to the tax accounts. That is why during the last few years there has been a tendency in Germany to rely more and more on the financial information given in the consolidated statements to judge the economic power of a parent company. Consolidated financial statements are becoming more important for financial analysis in Germany.

Amount of Tax Payments

That the mode of computing taxable income influences the amount of taxes and the reliability of tax payments received by the state is very understandable.

International Harmonization of Accounting

At the beginning of the preparation of the 4th Directive, the EEC Commission was against the influence of tax accounting rules on financial accounting because this would be in conflict with the true and fair view concept. However, Germany was reluctant and resisted this initiative carried mainly by Great Britain, Ireland, and the Netherlands and succeeded to have some regulations included in the 4th Directive which refer to the existence of the interaction between these two accounting systems. This firm position was the result of the goal of the German government that the implementation of the 4th Directive should, as far as possible, be tax-neutral.¹⁸

A strong impact of tax accounting on financial accounting is generally a substantial point of hindrance to the international harmonization of accounting. Tax reforms and political intentions which can vary substantially from country to country influence the representation of the financial position of a company differently in each country. As has been shown, the strong principle of congruency in Germany leads to a violation of the rules incorporated in the 4th EEC Directive. One of the main facts that hinder the comparison of German financial statements with others in Europe is the very weak interpretation and the lack of acceptance of the true and fair view principle in a British sense in Germany. This basic difference in accounting conception, caused substantially by the "Massgeblichkeitsprinzip," is the major reason for accounting disharmony in Europe.

Summary

The very close interaction of financial accounting and tax accounting in Germany, called the "Massgeblichkeitsprinzip," is a significant characteristic of German accounting. This principle of congruency has a number of direct and indirect effects on accounting regulation and practice. As a result German financial accounting is

dominated by tax rules and tax-motivated accounting decisions of the companies. This results in a pessimistic presentation of the net worth, the financial position, and the results of a company. The few rules that require incremental information in the notes and the balance sheet of financial statements are unable to compensate for these negative effects of the "Massgeblichkeitsprinzip," namely the impaired information content of the published commercial accounts. German commercial financial statements can hardly be correctly interpreted, even by a person with a sound and comprehensive knowledge of the German tax law. The principle of congruency leads to a deformation of the financial statements and is in conflict with the central principle of the 4th EEC Directive, the true and fair view. It even leads to specific violations of the rules of the 4th EEC Directive. In short, the true and fair view concept is not applicable to German balance sheets. This fact results in a disharmony in European accounting, not only in regard to the specific rules but particularly in regard to the general interpretation and the concepts of accounting.

The problem of the relationship between financial income and taxable income computation has become a very current one that the EEC Commission must consider in creating a EEC Directive to harmonize the taxable income computation in Europe. A first step has already been taken with the issue of an exposure draft in 1988. A consensus on this point will be the basis for income tax harmonization in Europe, which is schedule to be achieved in the mid-1990s.

Notes

1. The term "Massgeblichkeitsprinzip" is extremely difficult to translate into English. In some English literature it is translated as the "principle of bindingness;" Christopher Nobes, *Interpreting European Financial Statements: Towards 1992* (London: Butterworths 1989), 8–9. The meaning and the scope of the term "Massgeblichkeitsprinzip" should become clear by reading the paper.
2. Winfried Gail, Michael Greth and Roland Schumann, "Die Massgeblichkeit der Handelsbilanz für die Steuerbilanz in den Mitgliedstaaten der Europäischen Gemeinschaft," *Der Betrieb* (No. 27/28, 1991), 1389–1400.
3. Joachim Schulze-Osterloh, "Handelsbilanz und Steuerbilanz," *Steuer und Wirtschaft*, (August 1991), 284–296; Arndt Raupach "Von der Massgeblichkeit der Handelsbilanz für die steuerliche Gewinnermittlung zur Prädominanz des Steuerrechts in der Handelsbilanz," *Betriebswirtschaftliche Forschung und Praxis* (No. 6, 1990), 515–526; Wolfgang Ballwieser "Ist das Massgeblichkeitsprinzip überholt?" *Betriebswirtschaftliche Forschung und Praxis* (No. 6, 1990), 477–498.
4. Walter Mathiak, "Massgeblichkeit der tatsächlichen Handelsbilanzansätze für die Steuerbilanz und umgekehrte Maßgeblichkeit," *Steuerberaterjahrbuch 1986/7* (München: Beck, 1987), 79–107; Klaus Pohl, *Die Entwicklung des ertragsteuerlichen Massgeblichkeitsprinzips* (Köln, 1983).
5. Decision of the Bundesfinanzhof of February 3rd, 1969, Bundessteuerblatt II 1969, 291.
6. The Handelsgesetzbuch (HGB) is the German Commercial Code.
7. Karlheinz Küting, "Auswirkungen der umgekehrten Massgeblichkeit auf die handelsrechtliche Rechnungslegung," *Betriebswirtschaftliche Forschung und Praxis* (No. 2, 1989), 109–122.
8. Fouad K. AlNajjar and William H. Volz, "The Status of Accounting and its Environment in West Germany: An Overview," *International Journal of Accounting* (1991), 104–117.
9. Franz W. Wagner, "Tax Balance Sheet," in Erwin Grochla et al., eds., *Handbook of German Business Management* (Stuttgart C.E. Poeschel, 1990) 2334–2340.
10. Hans G. Rautenberg, "Externe Rechnungslegung, Massgeblichkeitsprinzip und Finanzierung," in Dieter Ahlert et al., eds., *Finanz- und Rechnungswesen als Führungsinstrument* (Wiesbaden: Gabler, 1990) 253–268.
11. Decision of the Bundesfinanzhof of February 3rd, 1969, Bundessteuerblatt II (1969), 291.
12. There are three EEC Directives which are relevant for accounting. These are the 4th Directive (Directive 78/660/EWG), the 7th Directive (Directive 83/349/EWG), and the 8th Directive (84/253/EWG).

13. Art. 2 Para. 3 of the 4th Directive claims: "The annual accounts shall give a true and fair view of the company's assets, liabilities, financial position and profit or loss."
14. Christopher Nobes, *Interpreting European Financial Statements: Toward 1992* (London: Butterworths, 1989), 8–9; Heinrich Beisse, "Die Generalnorm des neuen Bilanzrechts und ihre steuerrechtliche Bedeutung," *Handelsbilanz und Steuerbilanz* in Winfried Mellwig et al., eds., (Wiesbaden: Gabler, 1989), 15–32.
15. Christopher Nobes, *Interpreting European Financial Statements Toward 1992* (London: Butterworths, 1989), 8–9.
16. Treuarbeit, *Jahresabschlüsse '87* (Düsseldorf: IDW-Verlag, 1989), 110.
17. Walter Mathiak, "Massgeblichkeit der tatsächlichen Handelsbilanzansätze für die Steuerbilanz und umgekehrte Maßgeblichkeit," *Steuerberaterjahrbuch 86/87* (München: Beck, 1987). Thomas Schildbach, "Massgeblichkeit – Rechtslage und Perspektiven," *Betriebs-Berater* (No. 21, 1989), 1443–1453.
18. Joachim Schulze-Osterloh, "Handelsbilanz und steuerrechtliche Gewinnermittlung," *Steuer und Wirtschaft* (No. 3, 1990) 284–296.

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The Determinants of Systematic Risk in Multinational Corporations After SFAS 52

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Key words: Market risk; Multinational equities; portfolio returns; SFAS 52

Abstract: *The systematic risk of a US multinational corporation (MNC) is influenced by the time period when the risk is measured, the industry to which the firm belongs, firm size, the level of public familiarity with the company, and its investments in research and development projects, with operating leverage and the extent of its international involvement also contributing. During 1971–1990, MNCs have underperformed their domestic counterparts by registering significantly lower actual and risk-adjusted returns while offering essentially the same level of risk. The impact of the change in the method to compute accounting earnings of international subsidiaries caused by the adoption of SFAS 52 is considered.*

Accounting literature suggests that one of the reasons firms become multinational firms is to reduce risk by spreading their investments and returns over several countries. This dispersion should lead to a decrease in systematic risk. However, multinational diversification has the potential to increase risk from foreign exchange rates and political sources. Are US-based multinational corporations (MNCs) riskier than firms operated solely within the United States given the additional risks of international operations, or does international diversification reduce the market risk of MNCs to the same level as that of domestic corporations (DCs)? Are higher risk-adjusted rates of return obtainable from MNCs than from DCs (Fatemi, 1984)? Such research is useful in understanding the extent to which MNCs may have different objectives in their international diversification programs; however, past empirical research has given us mixed results on these questions.

Beyond the question of levels of risk and return, this paper will investigate the determinants of MNCs' risk in order to understand whether the differences in level of risk and return are due to multinational diversification or to other determinants. What are the primary determinants of the systematic risk of MNCs? Stockholders must decide from an international financial accounting point of view whether to invest in US-based MNCs or in foreign companies to achieve international diversification. Furthermore, financial managers must consider the determinants of systematic risk in order to make appropriate capital decisions.

A significant body of prior research has focused on the impact of new and currently available information on stock prices and stockholders' returns. Studies by Ball and Brown (1968) and Beaver (1968) found that the events that affect accounting earnings also have an impact on security prices. More recent studies suggest that the relationship between earnings and prices is not perfect (Beaver et al., 1987) because other variables, in addition to earnings, have an impact on stock prices or because not all the change in earnings may be associated with the future dividend-paying ability of a firm. This view has also been adopted by Stice (1991), who demonstrated that market inefficiencies exist for small firms whose earnings are announced late in the *Wall Street Journal* in relationship to their 10K filing. Other evidence on this position is presented by Cornell and Landsman (1989) that shows fourth quarter earnings announcements provide more pertinent information to decision makers than interim reports. Brown (1989) recently suggested that this type of research incorporates very restricted views of the financial world. Moreover this type of research has primarily explored the relationship between earnings behavior and changes in stock prices. Limited research has focused on the impact that accounting information has on the risk of the firm.

The standard list of determinants of risk includes (Foster, 1986): financial leverage, operating leverage, unexpected earnings variability, and lines of business (Beaver, et al., 1970; Hill and Stone, 1980). A different research pattern is represented by the attempt to explore whether different corporate strategies have an impact on the risk and return of the firm. Such is the case of corporate international diversification.

This form of research is most significant in view of the issuance of SFAS 52. SFAS 52 requires managers to exercise judgment in using temporal or current rate methods of currency translation. Since return on investment (ROI) is a vital measure of subsidiary performance, the measurement of foreign subsidiary assets becomes critically important in evaluating managerial performance, determining incentives, and allocating resources. The majority of market and event empirical studies have assumed that different accounting methods do not have an effect on the free cash flow of the firm, and therefore have no effect on the price of the common equity. However, it has been argued that the choice of accounting methods does affect the monitoring, information, and other contracting costs between the firm and its stockholders, and consequently the contracting parties wealth (Watts and Zimmerman, 1990).

The implementation of SFAS 52 was generally expected to reduce earnings volatility (Jaggi and Chatwal, 1990). Numerous recent studies have empirically demonstrated the relationship between the adoption of SFAS 52 reporting standards and earnings volatility. Kirsch et al., (1990) suggest that firms differ in the extent to

which they emphasize short term accounting objectives over economic value objectives. Their research found that firm size and absence of a management compensation scheme were the factors that determined whether a firm supported the adoption of SFAS 52 standards. Similarly, Ndubizu (1990) found that early adopters of SFAS 52 were smaller in size, had lower earnings growth, higher dividend payout and lower earnings volatility than later adopters. The study concludes that reductions in earnings volatility were the principal reasons for corporations reporting under SFAS 52 standards. Finally, a study by Shallchi and Hosseini (1990) explored the ability of SFAS 52 standards to reduce the amount of unnecessary hedging activities that were used by MNCs to lower earnings volatility resulting from exchange fluctuations. The study found that the hedging activities of MNCs decreased after the adoption of SFAS 52 standards.

In light of this past research on accounting data studies, it is significant to explore the sources of the market risk of MNCs and DCs. Past studies suggest that research is needed to analyze the specific sources of risk in order to develop more effective methods to evaluate foreign subsidiary performance.

Previous Empirical Research

A number of studies have attempted to provide an answer to the questions posed above. Some of the most important empirical studies made on US-based MNCs are reviewed in historical sequence. Hughes et al., (1975) compared the performance of a portfolio of 46 MNCs with a portfolio of 30 domestic corporations DCs in the period 1970–1973 and found that the MNCs had lower systematic risk, lower total risk, and higher risk-adjusted returns (according to Treynor's measure) when a domestic market index was used as a proxy for the market factor. The authors concluded that US investors recognize MNCs as a substitute for direct international diversification.

Similarly, Rugman (1976) found that the variance of the accounting return of equity of *Fortune* 500 firms, in the period 1960–1969, decreased as the degree of international involvement increased. He forecast that the benefits of indirect international diversification through the purchase of MNC's stock would disappear as the world economy became more integrated.

The conclusion that US investors recognize the international composition of MNCs was supported by Agmon and Lessard (1977), who studied 217 firms in the Period 1959–1972 using an international market model. It was found that when the degree of international involvement of the firm is high, (a) the beta coefficient relating firm return to the US market index is low, and (b) a rest-of-the-world beta is high. The authors argued in favor of indirect international diversification through the purchase of MNC's stock.

Not all the empirical evidence supports this conclusion. Jacquillat and Solnik (1978) studied 23 US MNCs and 40 European MNCs during the period 1966–1974 and found that the beta coefficient relating the returns of the firms to the domestic index was larger than expected on the basis of their degree of international involvement, and that the firm's return sensitivity to an aggregate foreign stock index were

smaller than expected given the degree of international diversification. It was concluded that since MNC's stock prices behaved so much like the stock prices of domestic firms, investing in MNCs is not a substitute for direct international portfolio diversification. These negative conclusions were supported by a study made by Senchack and Beadles (1980), who found that portfolios consisting of DCs provided lower levels of total risk with fewer securities than the portfolios of MNCs.

The conclusion that MNCs are poor substitutes for direct international diversification is also supported by Brewer (1981). Using Fama and MacBeth's (1973) methodology, he compared the risk-adjusted return of 137 DCs with 151 MNCs during the period 1963–1975. It was found that the two groups of firms had the same risk-adjusted performance. Accordingly investing in MNCs does not provide special advantages over investing in DCs. However, it was recognized that beta gains could justify investments in MNCs; that is, investing in MNCs may reduce the beta of the portfolio of a US investor.

Errunza and Senbet (1981) suggested that both real market and capital market imperfections have an effect on the rate of return of MNCs. They studied a sample of 50 firms during the period 1968–1977 and found that the ratio of excess market value to sales had a positive association with the degree of international involvement. This result was particularly significant for a period of time when barriers to capital flows were in effect. The importance of the time period under study has also been emphasized by Siddharthan and Lall (1982) who compared the rate of growth of the 74 largest US MNCs in the period 1976–1979. It was found that the degree of international involvement had a negative association with growth during this time period, possibly due to a location shift back to the United States or to increasing competition from other MNCs. This conclusion implies that the investment opportunity schedule of MNCs is becoming similar to the investment opportunity schedule of DCs.

Fatemi (1984) compared the risk and return of 84 MNCs and 52 DCs in the period 1976–1980. His results indicate that the riskiness of an MNC declines as the degree of international involvement increases. The risk-adjusted returns – calculated using Fama and MacBeth's methodology – were identical for the two groups. However, Fatemi found indications of abnormal returns during the time period when the initial international diversification took place. This result underlines the importance of the time dimension in comparative studies

Other studies suggest that MNCs need to generate a higher rate of return, or lower their level of risk to compensate for their additional risks and costs. Lee and Kwok (1988) compared 421 DCs and 413 MNCs during the period 1964–1983. They used the foreign tax ratio, instead of the traditional foreign sales ratio, to classify the firms in this relatively large sample. It was found that MNCs are less leveraged than DCs. This result was attributed to higher agency costs which decrease the optimal level of debt of MNCs. As a result, MNCs have a lower level of risk than DC. From a conceptual perspective, Fang (1966) concluded that US investors should ask for a higher rate of return from MNCs to cover the risk of barriers to direct foreign investments and foreign exchange risk.

The recent empirical research on the risk and return of MNCs suggests several research avenues: (1) the possibility of using larger sample sizes if the foreign tax

ratio is used to determine the degree of international involvement; (2) the importance of using and comparing several time periods to study the relationship between changes in the firm's degree of international involvement and changes in performance; (3) the importance of identifying the sources of the level of risk of MNCs in order to determine the appropriate required rate of return to be used in the evaluation of international investment projects.

This paper will investigate further all three of the above openings. The next section describes the data, sample selection, and methodology used to segregate MNCs and DCs. We then report the results of our testing the null hypothesis of equality among average returns, systematic risk level, and excess returns of portfolios containing MNCs, DCs, and an intermediate group of firms. The third section further analyzes the risk measure in order to identify the sources of variation in the sample companies' systematic risk. The fourth section concludes and summarizes the findings.

Data and Methodology

The sample consists of New York Stock Exchange (NYSE)-listed companies that have continuous data – both monthly market and annual financial data – in the COMPUSTAT tapes during any of the four periods: 1971–1975, 1976–1980, 1981–1985, and 1986–1990. We omitted those with SIC code 4000–4999 to avoid regulated firms. The purpose is to include as many companies as possible so that a very general picture would emerge as to the risk-return structure among companies with varying degrees of international involvement. To require continuous data for the entire 20 years might omit a substantial number of firms that could contribute to a fuller picture. Collected this way, the sample offers a cross-section of all companies – long-established as well as recent ones. Accordingly, a firm may be counted as one, two, three or four cases, depending on whether it has continuous financial and market data in one or more of the five-year periods. Altogether, we obtained 2273 cases for this study.

Next, we calculated the degree of international involvement for each firm. DII is defined as the ratio of foreign taxes to total taxes, averaged over the five-year period. Foreign taxes are considered better gauge of a company's foreign involvement in international investment than, for example, annual sales or the number of subsidiaries overseas. In the first case, using overseas sales as a proxy for DII mixes international investment with international trade; in the second, the number of subsidiaries is a rather qualitative measure: subsidiaries are not identical, or even homogeneous, and therefore not comparable even though they belong to the same parent company. Foreign taxes on the other hand, accurately represent the level of a company's profit-making activities in a host country and can, therefore approximate extent to which it is involved business-wise in that country. Besides, data on foreign taxes have been reported in financial statements since 1969, and are more easily obtainable than the segregated amount of overseas sales or number of overseas subsidiaries.

Table I.: The Sample

A. Distribution of companies

Total	Time period	Degree of international involvement		
		0%	1–24%	>25%
163	1971–75	33	59	71
	1976–80	144	179	137
460	1981–85	295	251	234
780	1986–90	321	251	298
870	Total	793	740	740
2273		DCs	ICs	MNCs

B. Distribution in percentage

Total	Time period	Degree of international involvement		
		DCs	ICs	MNCs
7.17	1971–75	1.45	2.60	3.12
	1976–80	6.33	7.88	6.03
20.24	1981–85	12.98	11.04	10.29
34.31	1986–90	14.12	11.04	13.11
38.27	Total	34.88	32.56	32.55
100.00				

C. Average DII in each subgroup

Average	Time period	Degree of international involvement		
		DCs	ICs	MNCs
24.07	1971–75	0.00	11.41	45.77
	1976–80	0.00	11.46	45.12
17.90	1981–85	0.00	9.54	47.80
17.41	1986–90	0.00	10.32	51.68
20.68	20-year average	0.00	10.42	48.67
19.24				

The domestic-multinational demarcation has been another unsolved problem in the literature. Some researchers use 0% (i.e., any degree of international involvement automatically turns a domestic firm into a multinational one); others use a low threshold (10% by Lee and Kwok, 1988, for example); while still others draw the line at a higher level (Fatemi, 1984, defines 0% as domestic, 25% and up as multinational, and discards anything in between). For our part, we recognize that some US-based corporations remain essentially domestic even though they do have

substantial investments overseas, and that some MNCs manage to take advantage of the concessions by the host countries so that they pay a minimal amount of foreign taxes as a percentage of their total taxes. Thus, to avoid having to categorize the borderline firms into one group or the other, we gave them another classification. The sample was therefore divided into three groups based on their foreign tax ratio. Those that pay no foreign taxes are obviously "Domestics." The remainder were divided into two equal groups. Those with highest foreign tax ratios (25% and over) are "Multinationals," the in-between firms (0.01–24% foreign tax ratio) are labeled "Intermediates" (ICs). Divided this way, the indistinct domestic–multinational border disappears and we have two distinct groups plus a third – to be used as a control in the study. Table 1 reports the breakdown of sample companies by group as well as by time period. Panel A indicates that there are 793 DCs, 740 ICs, and 740 MNCs. Panel C shows that the average IC has a DII of 10.42%, and the average MNC 48.67%.

Each company's monthly returns, systematic risk, and excess returns were then calculated, where

$$\begin{aligned} r_{it} &= \text{adjusted return for firm } i \text{ in month } t \\ &= P_{it}/P_{i,t-1} - 1 \end{aligned}$$

where P_{it} is the price per share adjusted for stock split and stock dividend.

B_{it} = beta of company i calculated by using returns of the 60 months prior to month t ,

$$B_{it} = \text{cov}(r_i, r_m) / \text{var}(r_m)$$

and r_m is the return from a market portfolio proxied by the S&P's 500 index.

$$\begin{aligned} e_{it} &= \text{excess return of firm } i \text{ in month } t \\ &= r_{it} - Y_{0t} - Y_{1t}B_{it} \end{aligned}$$

where Y_{0t} and Y_{1t} are market-determined regression coefficients of returns on systematic risk calculated according to the methodology of Fama and MacBeth (1973).

Next, we calculated average monthly returns, betas and excess returns of the portfolios integrated by all the DCs, ICs, and MNCs. A portfolio average is simply the arithmetic average of all values in that portfolio. In all, we obtained 240 monthly returns, betas, and excess returns for each of the three portfolios from January 1971 to December 1990.

Statistical Analysis

Table 2 contains the summary statistics for the distributions of portfolio returns, betas, and excess returns. On average, MNCs as a group provide the lowest return, with DCs the highest, and ICs in between. The portfolio betas, however, are not in the same order: ICs' average is the highest. MNCs' the lowest, and DCs' somewhat closer to MNCs than to ICs. Similar to Fatemi's (1984) results, the average excess

Table 2. Monthly returns, betas, and excess returns: summary statistics (240 months)

Monthly Excess Returns	Portfolio Returns	Portfolio Betas
<i>A. Domestic companies</i>		
Mean	1.121	1.095*
0.167		
Standard deveiation	6.086	0.153
1.277		
Minimum value	-29.130	0.852
-3.956		
Maximum value	25.846	1.426*
4.531		
Std error of mean	0.393	0.010
0.082		
Coeff. of variation	5.429	0.140
7.647		
Kolmogorow-Smirnov Z	1.086	1.872**
0.987		
Significance of Z	0.189	0.002
0.284		
<i>B. Intermediate companies</i>		
Mean	1.046	1.113
0.104		
Standard deviation	5.840	0.126
0.838		
Minimum value	-29.381	0.930
-2.166		
Maximum value	20.690	1.371
2.582		
Std error of mean	0.377	0.008
0.054		
Coeff. of variation	5.583	0.113
8.058		
Kolmogorov-Smirnov Z	0.882	1.898**
0.564		
Significance of Z	0.418	0.001
0.908		
<i>C. Multinational companies</i>		
Mean	0.735	1.078
-0.180		
Standard deviation	5.694	0.091
1.066		
Minimum value	29.873	0.911
-3.128		
Maximum value	19.437	1.306*
2.982		
Std error of mean	0.368	0.006
0.069		
Coeff. of variation	7.747	0.084
-5.922		
Kolmogorov-Smirnov Z	0.823	1.133*
0.502		
Significance of Z	0.507	0.153
0.963		

*significant beyond the 0.05 level.
**significant beyond the 0.01 level.

Table 3. Test of equality of portfolio returns, betas, and excess returns

I. *t*-Test (239 df)

A. *Monthly portfolio returns*

$X_1 : X_2$ <i>t</i> -value	μ_1	μ_2	$\mu_1 - \mu_2$	Std dev.	Std err.
DCs : ICs 0.65	1.1206	1.0463	0.0743	1.765	0.114
DCs : MNCs 2.76**	1.1206	0.7348	0.3858	2.163	0.140
ICs : MNCs 3.70**	1.0463	0.7348	0.3115	1.305	0.084

B. *Excess portfolio returns*

$X_1 : X_2$ <i>t</i> -value	μ_1	μ_2	$\mu_1 - \mu_2$	Std dev.	Std err.
DCs : ICs 0.56	0.1674	0.1037	0.0637	1.774	0.115
DCs : MNCs 2.55*	0.1674	-0.1799	0.3472	2.108	0.136
ICs : MNCs 3.45**	0.1037	-0.1799	0.2835	1.274	0.082

II. Kruskal–Wallis one-way analysis of variance of ranks of betas

Mean rank					
Observed level	DCs	ICs	MNCs	<i>H</i> -stat	of
sig.					
	DCs : ICs : MNCs	351.08	386.76	343.66	5.8913
0.0526	DCs : ICs	229.62	251.38		2.9539
0.0857	DCs : MNCs	241.96		239.04	0.0531
0.8178	ICs : MNCs		255.88	225.12	5.9007
0.0151*					

* Significant beyond the 0.05 level.

** Significant beyond the 0.01 level.

return of DCs is highest, followed by that of ICs, and with MNCs' average being negative. For DCs, the standard deviation of monthly returns and betas are the highest, followed by those of ICs and MNCs, respectively. While the coefficients of variation for betas are in descending order and well-spaced (0.140, 0.113, and 0.084 for DCs, ICs, and MNCs), those for their monthly returns are in reverse order (5.429, 5.583, and 7.747), with DCs and ICs very close together. The implication here is that MNCs as a group tend to have moderate and stable betas, but their total risk (as measured by the standard deviation of monthly returns), though very much in line with the rest of the sample, is relatively high when their low average return is taken into consideration.

The objective here is to test whether the three portfolios are statistically equal with respect to monthly returns, betas, and excess returns. To determine the appropriate

statistical technique for the test, we need to determine whether the data are normally distributed. If so, we can use a *t*-test to compare the means of each sample-pair; otherwise, the Kruskal-Wallis one-way analysis of variance is the proper test for equality. For the normality test, the Kolmogorov-Smirnov statistics were computed for actual returns, betas, and excess returns of all three groups. According to these statistics, also listed in Table 2, all actual returns and excess returns follow a normal distribution, whereas not all betas do.

After the appropriate statistical techniques were applied, the results presented in Table 3, indicate that the monthly returns and excess returns from DC and MNC portfolios are not samples from the same population while their respective betas are not statistically different. In both return measures, MNCs as a group stand apart from ICs and DCs, which are not distinguishable between themselves. These results are different from those reported in previous studies. Fatemi (1984) and Brewer (1981), for example, found that the monthly returns from a portfolio of MNCs are not statistically different from returns from a portfolio of DCs. But our results confirm those of Fatemi's in terms of betas only, although our level of significance is not as high.

The MNC portfolio's low monthly and excess returns, combined with essentially the same beta as the other portfolios, imply that MNC stock was overpriced. Investors may have perceived MNCs to be less risky than DCs of comparable size and industry while in actuality they were not. The realized returns then fell short of the expected returns, causing the excess returns to be negative. Perhaps the market imperfections thought to exist during the 1960s have lessened. More recently, a larger number of MNCs have offered the same diversification service, thereby reducing the "diversification premium" predicted by Errunza and Senbet (1981). Our findings confirm the results of the studies by Jacquillat and Solnik (1978), Senchack and Beadles (1980), and Brewer (1981). These results are also consistent with the idea that during the 1960s foreign economies were attractive enough to justify an investment in projects with a positive net present value; the price of NBC stock was adjusted upward, thus producing a high rate of return during the period when the new investments were made the 1970s and in the 1980s, the number of extraordinary investment opportunities decreased but the perception of lower-risk MNCs may have persisted. The investors accordingly overpriced MNC stock, receiving negative risk-adjusted returns as a result.

Determinants of the Systematic Risk

There is still speculation as to the sources of risk in MNCs. Agmon and Lessard (1977) concluded in their study that a firm's degree of international involvement is negatively correlated with its beta coefficient. Yet, Jacquillat and Solnik (1978), and later Senchack and Beadles (1980), found that DII is not a very important determinant of a company's systematic risk. This controversy gave rise to the speculation of other factors which might influence a company's beta.

The time period under study has been cited as a possible explanatory variable. One supporting hypothesis is that the global integration of product and factor markets

has resulted in MNCs having the same investment opportunity schedule as DCs, thereby reducing the former's advantage in international diversification. Errunza and Senbet (1981), and later Siddharthan and Lall (1982), found time period an important factor affecting the rate of growth and degree of international involvement of MNCs.

Financial and business risk have also proved to be significant factors in the majority of studies. Hill and Stone (1980) found the market betas dependent on both financial structure and systematic operating risk (defined as the covariance between company and market Return on Assets (ROA) divided by the variance of market ROA). However, Shaked (1986), and Lee and Kwok (1988), found that MNCs are less leveraged than DCs. Industry, company size, and fixed assets have also been used as measures of business risk to explain the variation in market betas. The agency costs of debt, proxied by advertising and R&D expenses, seem to play a significant part in influencing firm's capital structure – and thus its beta (Myers, 1977). Finally, profitability, and dividend policy can also affect betas: a company that maintains a stable level of earnings, or has been paying stable dividends, or both, represents a lower risk to investors than a less predictable company.

The purpose of this part of our study is to identify factors that have significant influence on the systematic risk of a company, multinational or domestic, and to determine whether there are different sets of factors for MNCs and DCs, or whether common factors exist that affect all companies. With the list of possible factors that have been found to affect a firm's systematic risk as described above, we calculated for each of the firm's 2273 cases a five-year average of the following variables:

- (1) EPS = earnings per share;
- (2) ADV = advertising expenses as a percentage of sales;
- (3) RD = R&D expenses as a percentage of sales;
- (4) PROFIT = net profit margin;
- (5) FIXASSET = ratio of net fixed assets to total assets;
- (6) DEBT = debt/equity ratio;
- (7) DVD = dividend payout ratio;
- (8) DYLD = dividend yield;
- (9) SALES = total sales, used as proxy for firm size.

Analysis of Covariance

These nine variables, together with time period, industry factor (one-digit SIC code), and the degree of international involvement predictor variables for betas. Since some of the variables are metric, while others are categorical variables, an analysis of covariance ANCOVAR was performed, with beta as the criterion variable, time period, industry and DII as factors, and the remaining variables as covariates.

The ANCOVA results are presented in Table 4, Panel A. Time period and industry effects are statistically significant sources of variation in the systematic risk, whereas DII was significant only at the 0.06 confidence level. As for the covariates, advertising,

Table 4. Analysis of covariance – total sample dependent variable: beta

A. Factors: time period, industry, and degree of international involvement

	<i>F</i> -value	Sig. of <i>F</i>
Regression	7.77	0.000**
Time period effect	26.5	0.000**
Industry effect	6.69	0.000**
DII	2.63	0.060

Significant covariates

	Coefficient	<i>t</i> -value
ADV	−0.01597	−5.756**
R&D	0.01148	3.326**
PROFIT	−0.00251	−3.057**
FIXASSET	−0.00196	−2.788**
SALES	−0.00975	−2.909**

B. Factors: time period and industry

	<i>F</i> -value	Sig. of <i>F</i>
Regression	9.62	0.000**
Time period effect	28.40	0.000**
Industry effect	6.25	0.000**

Significant covariates

	Coefficient	<i>t</i> -value
ADV	−0.0168	−6.186**
R&D	0.0129	3.782**
PROFIT	−0.025	−3.106**
FIXASSET	−0.0019	−2.837**
SALES	−0.0108	−3.211**

*Significant beyond the 0.05 level.

**Significant beyond the 0.01 level.

R&D expenses, profitability, the level of fixed assets, and annual sales are significant. We then repeated the analysis, this time with DII as a metric variable, and still could not obtain significant coefficient (see Table 4, Panel B) for DII.

To identify the effects of these explanatory variables on the systematic risk of companies with varying degree of international involvement, the ANCOVA was next performed on each of the three subgroups. The results, in Table 5, indicate that DII is significant neither as a factor nor covariate in any of the three portfolios. Both time period and industry effects are significant factors for all three groups, while advertising expenses emerge as the only common significant covariate. The betas of both DCs and MNCs appear to be influenced by uncertain future outcome of the R&D, and by profitability (proxied by EPS for DCs and by the net profit margin for MNCs). In contrast, domestic firms' systematic risk appears to be related to both the business and financial risk (FIXASSET and DEBT) whereas the systematic risk of non-domestic corporations depends in part upon the firm size (SALES). The negative sign of the FIXASSET coefficient was quite unexpected, however, as firms with high operating leverage are normally associated with higher betas. This result suggests that firms tend to invest a large fraction of their resources in fixed assets when the overall beta risk of the firm is relatively low, and vice versa.

Table 5. Analysis of covariance – subsamples

<i>A. DCs</i>		
	<i>F</i> -value	Sig. of <i>F</i>
Regression	4.38	0.000**
Time period effect	8.02	0.000**
Industry effect	3.40	0.003**
<i>Significant covariates</i>		
	Coefficient	<i>t</i> -value
EPS	−0.03708	−2.2997*
ADV	−0.01162	−2.4464*
R&D	0.01819	2.5992**
FIXASSET	−0.00334	−2.5636
DEBT	0.00334	2.4454*
<i>B. ICs</i>		
	<i>F</i> -value	Sig. of <i>F</i>
Regression	6.03	0.000**
Time period	11.48	0.000**
Industry	4.56	0.000**
<i>Significant covariates</i>		
	Coefficient	<i>t</i> -value
ADV	−0.01447	−2.8886**
SALES	−0.00756	−2.9477**
<i>C. MNCs</i>		
	<i>F</i> -value	Sig. of <i>F</i>
Regression	6.06	0.000**
Time period	10.86	0.000**
Industry	4.99	0.000**
<i>Significant covariates</i>		
	Coefficient	<i>t</i> -value
ADV	−0.01369	−3.3231**
R&D	0.01443	2.9308**
PROFIT	−0.00751	−3.0636**
SALES	−0.00423	−3.2656**

*Significant beyond the 0.05 level.
**Significant beyond the 0.01 level.

The ratio of advertising expenses to sales may be an indicator of the extent of the “underinvestment problems” of the firm (Myers, 1977). High advertising expenses indicate that an important part of the value of the firm is represented by investment options or intangible assets. Myers argues that firms with many intangible assets bear high agency costs in the form of discounts in the price of their bonds and a higher cost of debt: a situation that results in a lower optimal amount of debt in their capital structure. That is, high advertising expenses may be associated with a lower debt ratio and a lower beta. Perhaps there is another interpretation. Suppose we consider the ratio of for ADV’s significance of advertising expenses to sales as a measure of investors’ familiarity with a company. Fluctuations in the financial markets To obtain further insight into the characteristics of systematic risk, the betas were partitioned by time period and DII. Table 6 lists the average beta of each subgroup

Table 6. Average beta by time period and degree of international involvement

Time period 5-year average	Degree of international involvement		
	0%	1–24%	25% and above
1971–75	1.1786	1.2134	1.1256
1976–80	1.1482	1.1098	1.1028
1981–85	1.0429	1.0502	1.0733
1986–90	0.8884	0.9535	0.9413
Weighted average	1.0051	1.0448	1.0306
	DCs	ICs	MNCs

as well as the column and row averages. The column totals are labeled “weighted averages” because the number of firms in each of the three time periods differs (see Table 1). From Table 6, we can see that MNCs’ betas are lower than those of DCs in the first two subperiods (1971–1980), but the opposite is true in the last two (1981–1990). This lends weight to our earlier conclusion that investors may have been so enamored with the idea of having higher return and lower risk from the early era of international diversification movement that they overpriced most MNCs’ stock with respect to their systematic risk in later years. Apart from the third five-year subperiod (1981–1985), the groups’ betas are never aligned in the order of international involvement: ICs’ beta is the highest in the earliest (1971–1975) and most recent (1986–1990) subperiod. Moreover in the middle ten-year span (1976–1985) betas for DCs and MNCs change places as the highest and lowest of the three groups. This may be an indication that, as a firm begins to diversify internationally, its systematic risk may actually increase, possibly because the transition from domestic to multinational operations generates a new and different pattern of cash flows which, to the market, represents a deviation from the expected, and hence an increase in risk. Later on, when the international operations become more established, the correlation of the firm’s returns with those of the market is reconfirmed, and its beta stabilizes.

Note that betas for all groups decrease as we move from earlier to more recent periods, and so do the intergroup differences. In fact the order of betas for DCs and MNCs is reversed precisely because the former’s betas decrease at a higher rate than those of the latter. Again, this confirms Rugnan’s (1976) forecast that, as world economy becomes more integrated, the benefits of indirect international diversification through the purchase of MNCs’ stock would disappear.

Multiple Regression Analysis

As some of the significant covariates seem to represent the same characteristic, the problem of multicollinearity may have existed in our ANCOVA results. Therefore

Table 7. Multiple regression analysis results (*t*-value in parenthesis) – dependent variable: beta

	Total sample	DCs	ICs
MNCs			
Constant	1.0989	0.9962	1.1964
1.2836	(44.24)	(46.26)	(28.13)
(19.53)			
DII			
–0.0023			
(–2.57)			
R&D			
0.0136			
(2.79)			
ADV			–0.0314
–0.0199			(–5.03)
(–4.89)			
PROFIT			
–0.0074			
(–3.56)			
FIXASSET	–0.0015		–0.0022
–0.0025	(–2.22)		(–1.99)
(–2.22)			
DEBT		0.0038	
		(2.68)	
SALES	–0.00481		–0.0083
–0.0041	(3.70)		(–2.84)
(–3.04)			
R ²	0.11	0.13	0.08
0.13			

we applied a multiple stepwise method, on the entire regression analysis, using the stepwise method, on the entire sample as well as on each subgroup, with betas as dependent variable and all the metric variables (including DII) as predictors. The regression results, which appear in Table 7, are quite similar to those obtained by ANCOVA. For the entire sample, SALES and FIXASSET yield significant coefficients. Their negative sign indicates that systematic risk varies inversely with firm size and that firms with a high degree of operating leverage compensate by lowering their financial leverage. Both independent variables also appear as significant predictors of the betas for ICs and MNCs. In addition, profitability is also a significant predictor, with the “correct” negative sign.

Debt ratio, with the expected positive sign, the only significant independent variable for the domestic firms’ systematic risk, reaffirming the close relationship between a firm’s financial leverage and its systematic risk. The significance of advertising expenses as a predictor of systematic risk for ICs and MNCs is confirmed, and either Myers’ agency-problem explanation or our notion of consumer familiarity can still be applied.

MNCs’ beta has the largest number of explanatory variables – a good indication of the complexity of its make-up. DII’s coefficient, is significant and negative, implying that the systematic risk of a transnational corporation declines with an

increase in international investments. R&D has a positive coefficient suggesting that uncertain future outcomes of research and development projects raise the systematic risk of an MNC.

Summary and Conclusion

We examined the monthly return data and annual financial data of 2273 NYSE-listed companies over four five-year periods, dividing those companies into three groups according to their degree of international involvement. We found that, over a 20-year period, although the monthly returns and risk-adjusted returns of multinational corporations are significantly lower than those of domestic ones the systematic risk of the two groups essentially indistinguishable – apparently violating one of the most important paradigms in finance. Upon further investigation, we discovered that the time period when data were collected for study and the industry to which a company belongs have a more significant bearing on the company's systematic risk than degree of international involvement.

In general, business risk and firm size are important factors affecting a firm's beta while profitability, investors' familiarity with the company, and advertising and R&D expenses – to a lesser extent – also exert a significant influence. A domestic firm's systematic risk is primarily related to its financial leverage, along with profitability, business risk, public familiarity with the company and R&D expenses playing supporting roles. In contrast, firm size, profitability, company name identification and R&D projects the most important factors affecting the systematic risk of an MNC, with business risk and the level of international involvement as contributing factors. Of the three groups, firms that are not clearly domestic or multinational display the highest level of systematic risk, possibly because of the disruption in the cash flows pattern as a result domestic-multinational transition. As their international diversification programs become more fully implemented, the cash flows become more predictable, and with the aid of portfolio effect the risk should decrease.

In the early 1970s, MNCs' systematic risk was on average lower than that of domestic firms. Corporate systematic risk appeal decline uniformly in the last two decades, with higher rate of descent for domestic firms than multinational ones so that their relative risk positions are reversed in the most recent years. As more and more US firms diversify globally, attractive investment opportunities overseas may become more scarce, forcing MNCs to undertake projects of ever higher risk. In addition, the host countries may be inclined to offer less generous concessions and in fact demand more equitable distribution of profits than previously. These two factors may have negated the beneficial effects of international diversification.

We conclude that MNCs can indeed be a tool for international diversification for an investor, but they have been so overpriced in the recent past that their returns may not justify the risk involved. The MNCs in our sample have, on average, a higher level of systematic risk than the DCs and should therefore have yielded higher actual returns than, or at least more comparable risk-adjusted returns to,

those of DCs. Finally, it appears that the capital markets of the world have become more integrated, so that the return of MNCs' stock is highly correlated with a domestic market index – as is evident in MNCs' betas. The investors have certainly recognized investing in MNCs as a substitute for direct investments in foreign corporations; in fact, from our results they have placed too high a value on that substitutability.

Several recommendations for further research seem relevant. Since previous research found that earnings volatility did not have a clear impact on the adoption of SFAS 52, it is important to study whether market risk has been affected by the adoption of this accounting method. The question of whether emphasis on accounting or economic objectives has an impact on the type of managerial compensation schemes could be studied, considering both risk and return considerations. The use of international segment information could be used to further validate the use of foreign tax ratio as a measure of the degree of international involvement of the firm.

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Auditor–Client Conflict Resolution: An Investigation of the Perceptions of the Financial Community in Australia and Canada

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Key words: Auditor–client conflict; Auditor independence; Perceptions of the financial community in Australia and Canada.

***Abstract:** This paper reports the results of a study using 223 members of the financial community in Australia and Canada as subjects. The objective of the study was to determine the effect of four audit environment factors on the perceived likelihood that an audit firm will accept a client's preferred accounting treatment when a disagreement arises over a significant financial accounting issue. Each of the four factors – nature of the accounting issue; extent to which management consulting services were being provided; degree of competition within the profession; and size of the audit firm – were perceived to be significant determinants of audit firm behavior.*

The desire to improve the integrity in financial reporting and the independent auditor's role in enhancing the integrity has never been more important than it is today. This is evidenced, in part, in the conclusions of the Report of the Commission to Study the Public's Expectations of Audits (Macdonald Commission)¹ and in the recent exposure draft and the accounting recommendation issued by the accounting standard setting bodies in Australia and Canada respectively.² The latter pronouncements document the concepts underlying the accounting standards and practices to be followed in the general purpose financial reports of companies in the private sector and are intended to assist management and independent auditors in making judgments in applying accounting standards and when establishing accounting policies in areas where accounting standards have not been established. Although the Commission recommended no fundamental changes to the financial reporting structure in Canada

it did advise the profession to meet public expectations within that structure through the achievement of three major objectives: to strengthen and maintain the independence of auditors; to strengthen the professionalism of auditors; and to extend and improve standards for financial disclosure.

Further indications of concerns for the maintenance of financial reporting integrity in both countries is evidenced by statements and observations made by regulators, practitioners, academics, and by a variety of financial commentators in each country prior to the issuance of either the exposure draft or the accounting recommendation or the Commission's recommendation. For instance, Sir Henry Bosch, the chairman of the National Companies and Securities Commission (NCSC)³ of Australia, has been characterized as feeling that there are too few accounting standards, and those that there are as having too many loopholes and that the loopholes are being capitalized upon by the personal interpretation of the accountant in the reporting company. Bosch, in a March 1987 address to the State Congress of the Institute of Chartered Accountants in Bunbury, Western Australia is reported by Poole to have cited numerous examples of creative accounting employed by major publicly listed companies in Australia which tend to distort financial information. The distortions included disclosing capital gains as operating profits, unrealized gains as revenues, dubious treatment of goodwill, recording unrealized foreign currency losses as assets, and differing equity accounting, consolidation and depreciation interpretations. He viewed the auditor as being lax in having permitted such distortions. Similar sentiments were expressed by the staff of the Ontario Securities Commission (OSC) in its submission to the Macdonald Commission. The staff identified a number of important accounting issues for which the technical standards of the profession are either nonexistent or too general to be of practical value. Beck and Cherry (1987),⁴ in discussing the concerns raised by their staff concluded: "There is no escaping it – auditors must strongly assert their independence and exercise sound professional judgment in assessing any proposed financial presentation." They thought that some accountants and auditors either were ignoring the spirit of the standards or were taking the position that "anything goes" when the standards in Canada were otherwise silent.

Practitioners in both countries have outlined dangers to the profession if the financial community's perception of auditor independence is eroded. Sinclair (1987), a partner in the Melbourne office of Ernst & Whinney, observed that "... actual and perceived independence is the cornerstone of the strength of the profession today and ... the profession should continue to hold fast to its prohibiting of people in the attest function having a hand in management other than incidental management consulting ..." Newman (1986) reported Gunning, the national managing partner of Pannell Kerr Forster's Canadian practice, in an appearance before the Macdonald Commission as having warned the accounting profession that there is too much flexibility and too much range of what is acceptable in accounting presentation and that problems associated with this flexibility are potentially compounded when accounting firms also provide other high-fee subsidiary services to audit clients. Gunning commented: "... where these services have a big dollar value, the client may feel he can put leverage on an audit and there may be a great temptation for an auditor to bend to a client's view."

Academics in each country have expressed concerns with the overall integrity of financial reporting. In his assessment of the impact of authoritative accounting standards on independent auditing in Australia, Henderson (1985) concluded:

(a) Financial accounting standards have retained sufficient flexibility to ensure that the auditor's function in the accounting method decision is virtually unchanged. The auditor must still rely principally upon the professional judgment which was so emphasised in the pre-standard era.

(b) The standards have failed to come to grips with the problem of the estimates and judgments of management which are embodied in the financial statements. The audit function in this area has been completely unaffected by the issue of standards.

Walker (1986), in his reply to criticisms of the NCSC "Green paper,"⁵ indicated that adoption of the document's principal proposal should effectively reduce management's abuse of the flexibility inherent in accounting standards and an auditor's tolerance of such abuse. John Twigg (1987) quoted Dan McDonald of Simon Fraser University in his presentation to the Macdonald Commission as having said:

"... the side menu of options offered under generally accepted accounting principles enables publicly traded and other companies to choose a financial presentation that does not fairly present their position but still receives the auditor's signature." In addition the report of the Task Force of the Canadian Academic Accounting Association⁶ stated:

... increasing competition among auditing firms seems to be causing clients to view the audit as a commodity... Such management attitudes can also lead to opinion shopping when management shops around for the most compliant auditor. Eventually such competitive pressures could lead to "low balling" (charging unreasonably low fees with the possibility that an audit of poor quality or an incomplete audit will be performed) and loss of objectivity on the part of the auditor.

In a recent *Financial Times of Canada* article, Chisholm (1988) contends that stung by criticism they are caving in to clients and unwilling to enforce standards, and auditors are struggling to regain credibility. She reports that auditors are accused of acquiescing to client demands in that they are unwilling to adhere to generally accepted accounting principles. She suggests that strong competition for audits and resulting price cuts have pressured auditors both to cut corners and to deliver the kind of financial statements management wants.

Corcoran (1986), also a Canadian financial columnist, expressed similar concerns regarding an auditor's ability to maintain his objectivity when "selling scores of other services to management" and having to deal with "generally accepted elastic principles that are vague, inconclusive and open to interpretation." Wise and Wise (1986) quotes Dunstan as concluding: "It appears that auditors of public companies are beginning to develop some approaches which enable them to be seen to be publicly upholding the accounting profession's accounting standards without antagonising their corporate clients unduly."

A common theme in the conclusions of the Macdonald Commission and in the preceding comments of the regulators, practitioners, academics, and financial commentators is the issue of whether an audit firm will be able to resist client management pressure to acquiesce when a conflict arises over the appropriate treatment of a material accounting issue. While there is some empirical research available in a number of American studies, Australian and Canadian research is scant and little publicized. In addition, given the detailed accounting rules and procedures orientation in the United States and the accounting judgment philosophy in Australia and Canada, there is some debate as to whether the results of the American studies are generalizable to these countries.

The objective of this study is to provide empirical evidence by examining how Australian and Canadian security analysts and commercial account managers in banks perceive the ability of an audit firm to resist client management pressure when a significant conflict over an accounting issue arises. Specifically, the study investigates the perceived effect of four environmental factors: nature of the accounting standard; provision of management consulting services to an audit client; degree of competition among audit firms; and the size of the audit firm on an audit firm's ability to resist client management pressure.

Formulation of Research Hypotheses

Nature of the Accounting Standard

Much of the empirical auditor–client conflict research draws upon a routinism argument developed by Nichols and Price (1976) based upon Emerson's (1962) power–dependency relationships. They asserted that the more structured or routine an audit engagement, one in which either or both the accounting and auditing standards are more tightly specified, the better will be the ability of an auditor to resist client pressure to acquiesce.⁷ Shockley (1979) also included an accounting flexibility variable in his conceptual model of an auditor's ability to withstand pressure. Empirical research, all of which was undertaken in the United States, supported the structured/routinism contentions. In general, these studies conducted by Shockley (1979), Monger (1981), and Knapp (1985) indicated that management would be less likely to question or attempt to influence an auditor, or that an auditor would be perceived to be more able to resist management pressure when the accounting issue being debated was addressed by a more tightly specified standard.

Two accounting issues were selected to assess the extent to which the nature of the accounting standard affected financial statement users' perceptions of the ability of an auditor to resist pressure to comply with management's preferred accounting treatment. A disagreement over the appropriate treatment of a material subsequent event was selected to represent a precisely treated issue because both AAS 8 in Australia and Section 3820.10 in the Canadian Institute of Chartered Accountants (CICA) Handbook are comparable and clearly specify the generally accepted accounting treatment. On the other hand, the materiality/immateriality of an unrecorded liability was chosen to represent a more flexible accounting situation because AAS

5 is stated in more general terms and the CICA Handbook is relatively silent. Each issue was clearly described to the subjects and they were informed about the degree of specificity with which the standards of the profession prescribed the appropriate accounting treatment. The following hypothesis was used to test the effect of the nature of the accounting standard:

H₁: Financial statement users will perceive that management is more likely to obtain its preferred accounting treatment in a conflict with an audit firm when the accounting issue is not dealt with precisely by the accounting standards, as opposed to the situation where the accounting issue is dealt with precisely by the accounting standards.

Management Consulting Services

Although the provision of management consulting services (MCS) to audit clients has been the subject of considerable research over the past two decades in the United States,⁸ it has received only limited attention by Australian and Canadian researchers.⁹ The subjects (22 volunteer accountants drawn from six large accounting firms in the Illawarra area of Australia) in Gul's (1987) study found the provision of MCS (the design and installation of financial and cost accounting systems, budget and inventory control systems, and other related information systems) to be a significant variable which affected their perceptions of auditor independence. Lindsay et al. (1987), found that a relatively large minority of their Canadian subjects (45.3 percent of the analysts ($n = 163$) and 41.6 percent of the bankers ($n = 102$)) were concerned that the performance of MCS (25–30 percent of the total fees received by the accounting firm from the client are for the performance of management advisory services) for an audit client might lead to loss of independence. Apparently these subjects perceived the auditor who performs MCS for an audit client as being more likely to become more dependent on that client because the auditor fears the loss of fees generated by those services and, therefore, in order to protect those fees be more inclined to accept management's preferred accounting treatment in a disagreement situation. Similar sentiments have been expressed by both the Conference Board and the Macdonald Commission.¹⁰

In order to capture the salient aspects of the scenarios used in the Gul (1987) and the Lindsay et al. (1987) studies, the following MCS scenario developed by Knapp (1985) was used to depict a not atypical MCS situation:

Allied's (the client company) auditors are also currently working on a large management consulting project involving Allied's cost accounting system. The consulting engagement will most likely not be completed for another twelve months. The total fee for this project is expected to be equal to approximately 40 percent of the current year's audit fee.

Otherwise, the alternative scenario was that the audit firm was not to be providing any MCS to the client in the ensuing 12 months. The following hypothesis was formulated to assess the reaction of the subject to the provision/non-provision of MCS:

H₂: Financial statement users will perceive that management is more likely to obtain its preferred accounting treatment in a conflict with an audit firm when the firm provides a significant amount of management consulting services to the audit client as opposed to providing no such services.

Competition

The past decade has seen considerable debate over the level as well as the effect of competition on the independence of auditors. The Cohen Commission suggested that auditors would be seen as acquiring a stake in the future prosperity of a client and, thereby, compromising their independence if they negotiated low fees to retain an existing or to acquire a new engagement in the anticipation of recouping losses on reappointment in future years. The potential conflict between maintaining independence and retaining a client also was raised by Serlin (1985) in his allegations regarding “opinion shopping.” Farmer et al. (1987) indicate that as competition in accounting increases, auditors have been accused of placing client interests ahead of the needs of the general public. It is their belief that competitive pressures may be subtly or unknowingly causing auditors to compromise their independence on accounting issues. The task force of the Canadian Academic Accounting Association as quoted earlier, expressed similar views. Two empirical studies in the United States conducted by Shockley (1981) and Knapp (1985) found that analysts and bankers perceived auditors to be less independent when the local audit market was competitive.

The possible effect of a competition factor on the perceptions of auditor independence by financial statement users in Australia and Canada was examined by using two alternative scenarios initially used by Knapp in his study. In one of the scenarios, the immediate audit environment was described as being composed of a number of large auditing firms that were aggressively pursuing practice development (expansion) programs. The alternative scenario was depicted as one in which the other major firms in the immediate audit environment were not aggressive competitors. The effect of the competition factor on the perceptions of the subjects was tested by the following hypothesis:

H₃: Financial statement users will perceive that management is more likely to obtain its preferred accounting treatment in a conflict with an audit firm when the market in which the audit firm operates is characterized by a high, rather than a low, level of competition.

Audit Firm Size

Assertions have been made that auditor independence and the quality of an audit are related to the size of an audit firm. For instance, Mautz and Sharaf argue that a large audit firm will tend to be less dependent on a particular client than a smaller firm because the fees generated by the client constitute a smaller proportion of the total revenues of the audit firm. Dopuch and Simunic (1982) hypothesized that different auditing firms provide auditing services which are perceived by investors to be

different in quality, and in particular, that the Big Eight auditors are perceived as being more credible than non-Big Eight auditors.

Although Pany and Reckers (1980) concluded that the relative size of an audit client did not have a negative effect on stockholders' perceptions of an audit firm's independence, McKinley et al. (1985) later found that audit firm size was important to bankers in determining auditor independence. Shockley found that smaller audit firms were perceived by his banker and financial analyst subjects to have a higher risk of losing independence.

In a survey of chief financial officers of businesses which had switched auditors prior to a new issue of securities, Carpenter and Strawser (1971) found that the common rationale offered for most such moves (from local or regional firms to one of the Big Eight firms) was the positive association between share prices and "big name" auditors. The results of the Nichols and Smith (1983) study, although not conclusive, were consistent with the Dopuch and Simunic (1982) hypothesis. Francis (1984) found that Big Eight audit firms benefited from the existence of an audit product differentiation. Ettredge et al. (1988) concluded that their results were consistent with a quality difference between Big Eight and non-Big Eight auditors. In addition, several researchers argue that the quality of Big Eight audits is higher than that of non-Big Eight audits for a variety of reasons: more effective quality control programs, recognition of their greater public impact, and their "insurance" role.¹¹

Two scenarios, consistent with the major direction of the audit firm size arguments, were developed to examine whether subjects perceived larger (rather than smaller) audit firms to be less likely to comply with client management's preferences when a disagreement arises as to the appropriate application of an accounting standard. The audit firms in the study were depicted as being either one of the largest national CA firms in the country or as being a local one-office CA firm with a staff of 50 professionals. The following hypothesis was used to test the effect of audit-firm size:

H₄: Financial statement users will perceive that management is less likely to obtain its preferred accounting treatment in a conflict with an audit firm when the audit firm is a large firm rather than a small firm.

Although the complexity of the audit environment structural relationships suggest a number of interactions, the decision was made to test only formally for main effects. However, first-order interaction data are provided.

Research Methodology

Subjects

Two hundred and twenty-three experienced users of financial statements in Australia (49 security analysts (analysts) and 69 bank commercial account managers (bankers)) and Canada (50 analysts and 55 bankers) participated in the study. The subjects

Table 1. Study subjects

	Australian		Canadian		Total
	Analysts	Bankers	Analysts	Bankers	
Original sample	100	100	100	80	380
Less:					
Voluntary withdrawals	3	–	6	–	9
Adjusted sample	97	100	94	80	371
No. of respondents	49	69	50	55	223
Response rate (%)	50.5	69.0	53.2	68.8	60.1
Years experience in current occupation					
Mean	8.4	7.7	13.0	8.5	9.2
Median	7	7	12	7	8
Range:					
Minimum	1	1	2	1	1
Maximum	20	30	32	25	32
No. with more than 10 years' experience	19	25	27	21	92

were solicited with the help of key members in the participating organizations.¹² As indicated in Table 1, the four groups of subjects were quite experienced and were relatively homogeneous in terms of work-related experience. The analyst subjects mailed their completed instrument directly to the researcher while the banker subjects generally sealed the completed instrument in an attached envelope and returned it to a liaison person in the bank for mailing. This latter process may, in part, explain the higher response rate for the banker groups.

Experimental Procedures

The experiment was a full-factorial, repeated-measures analysis of variance design with four independent variables, each of which had two treatment levels as shown in Fig. 1. Each of the four pairs of treatment levels correspond to the levels implicitly defined in hypotheses 1 through 4.

The subjects were provided with the following constant information regarding the audit client: publicly owned, listed on a major Australian or Canadian Stock Exchange, and in quite good overall financial condition (all of the company's solvency and profitability ratios compared favorably to industry averages and net income had shown a modest but steady growth pattern over the last five years.)¹³ Subjects were required to record the likelihood that the disagreement would be resolved in

	Treatment level	
	1	2
Accounting issue	Materiality dispute	Disclosure dispute
Management consulting service	40 percent of audit fee	None
Competition	Aggressive	Not aggressive
Audit firm size	Local	Large national

Fig. 1. Treatment levels of independent variables.

favor of the accounting treatment preferred by management rather than the auditor in each of the 16 cases. They had all 16 cases available simultaneously and recorded their responses on a seven-point, equal-interval Likert scale. Consistent with the recommendation by Torgerson (1958, pp. 66–68), only the two endpoints on the scale were labeled. In an attempt to minimize the bias due to changes in the subjects’ psychological scales as they progressed through the cases, the subjects were informed that any number of cases could be assigned a given number on the scale and were encouraged to alter any responses to earlier cases if they should change their minds while completing the instrument.

Analysis of the data was conducted at the overall, group, and individual subject levels for each of the four experimental factors.¹⁴ The increasingly finer level of analysis permitted the computation of more precise sets of descriptive statistics for each group and each subject. In addition to the *F* statistic, an omega-square statistic (ω^2) was computed for all significant effects in each level of analysis. The latter statistic provides additional insight into the significance of a factor because it provides an estimate of the variance explained by each significant effect.¹⁵

Results

Overall Analysis

The mean scores for each of the four independent variables for “all subjects” is presented in Table 2. The differences between the treatment level means for each variable is significant at at least a 0.01 level. As indicated in Table 3, the percentage of subjects who were in agreement with the hypothesized main effect direction of each independent variable ranged from 72.7 for the provision of management consulting services to 81.1 for the size of the audit firm. The analysis of variance (ANOVA) results presented in Table 4 indicate that on an overall basis each of the

Table 2. Means for treatment levels of independent variables

	All subjects		Australian				Canadian			
			Analysts		Bankers		Analysts		Bankers	
	Treatment Level		Treatment Level		Treatment Level		Treatment Level		Treatment Level	
	1 ^a	2	1	2	1	2	1	2	1	2
Accounting	4.44 ^b	3.17	4.59	3.24	4.10	3.20	4.82	3.17	4.38	3.06
issue	(1.21) ^c	(1.27)	(1.20)	(1.26)	(1.15)	(1.19)	(1.31)	(1.36)	(1.08)	(1.30)
Management	4.06	3.54	4.31	3.52	3.89	3.41	4.21	3.78	3.93	3.51
consulting services	(1.02)	(1.02)	(0.85)	(0.86)	(0.99)	(1.07)	(1.14)	(1.14)	(1.03)	(0.93)
Competition	4.10	3.51	4.43	3.40	3.90	3.40	4.18	3.82	3.97	3.47
	(1.04)	(0.98)	(0.91)	0.74)	(0.98)	(0.99)	(1.19)	(1.12)	(1.01)	(0.97)
Audit firm	4.19	3.42	4.38	3.44	4.02	3.28	4.25	3.75	4.17	3.27
size	(1.00)	(1.05)	(0.89)	(0.83)	(0.96)	(0.98)	(1.17)	(1.14)	(0.95)	(1.13)
<i>n</i>	223		49		69		50		55	

^a The treatment level for each independent variable is summarized in Fig. 1.
^b Higher scale scores indicate a higher perceived likelihood that the client would obtain its preferred outcome in the audit conflict. A seven-point scale where 1 = very low likelihood and 7 = very high likelihood was employed.
^c () = standard deviation.

Table 3. Subject agreement with hypothesized effect of independent variables

Independent Variable	All subjects		Australians				Canadians			
			Analysts		Bankers		Analysts		Bankers	
	No.	%	No.	%	No.	%	No.	%	No.	%
Accounting issue:										
Positive	171	76.7	37	75.5	48	69.6	43	86.0	43	78.2
No agreement	15	6.7	4	8.2	4	5.8	4	8.0	3	5.4
Negative	37	16.6	8	16.3	17	24.6	3	6.0	9	16.4
Total	223	100.0	49	100.0	69	100.0	50	100.0	55	100.0
Management consulting services:										
Positive	162	72.7	38	77.6	51	73.9	34	68.0	39	71.0
No agreement	25	11.2	6	12.2	4	5.8	7	14.0	8	14.5
Negative	36	16.1	5	10.2	14	20.3	9	18.0	8	14.5
Total	223	100.0	49	100.0	69	100.0	50	100.0	55	100.0
Competition										
Positive	174	78.0	46	93.9	52	75.4	35	70.0	41	74.6
No agreement	24	10.8	3	6.1	6	8.7	7	14.0	8	14.5
Negative	25	11.2	0	0.0	11	15.9	8	16.0	6	10.9
Total	223	100.0	49	100.0	69	100.0	50	100.0	55	100.0
Audit firm size:										
Positive	181	81.1	42	85.7	60	87.0	33	66.0	46	83.7
No agreement	24	10.8	4	8.2	5	7.2	12	24.0	3	5.4
Negative	18	8.1	3	6.1	4	5.8	5	10.0	6	10.9
Total	223	100.0	49	100.0	69	100.0	50	100.0	55	100.0

four main effects (A, M, C, and S) was highly significant at a 0.01 level. In addition occupation type and nine first-order interactions were also found to have *p*-values less than 0.01.

Table 5 indicates both the percentage and relative percentage of variance explained by each main effect and first-order interaction identified as being significant at a 0.01 level in Table 4. On an overall basis, the four hypothesized main effects explained 22.1 percent of the variance in the subjects’ judgments. On a relative basis, the nature of the accounting issue directly accounted for 51.6 percent of the total explained variance and an additional 2.8 percent when first-order interactions are considered. In general, subjects perceived that management was most likely to obtain its preferred accounting treatment when the accounting issue under dispute was either not addressed by or was the subject of a non-specifically worded accounting standard. Smaller firms were viewed as being more vulnerable than larger firms when a disagreement arose between auditor and management (18.7 percent of the relative variance). Concern that competition among audit firms might lead to acquiescent behavior accounted for 11.0 percent of the relative variance, and the provision of management consulting services to an audit client accounted for an additional 8.6 percent.

Occupation type was the only one of the four additional factors (country, occupation type, order, and response) analyzed that was found to be significant at a 0.01 level. The nine interactions identified in Table 4 to be significant at a 0.01 level only explained 2.0 percent of the variance per Table 5 and, therefore, will not be considered any further at this stage. Since the variance explained by the difference in judgments

Table 4. Overall analysis of variance for all main effects and first-order interactions

Source of variation	SS	df	MS	<i>F</i>	<i>p</i>
Main effects:					
A = Accounting issue	1440.4	1	1440.4	603.7	0.000
M = Management consulting service	239.8	1	239.8	100.5	0.000
C = Competition	307.2	1	307.2	128.8	0.000
S = Audit firm size	528.3	1	528.3	221.5	0.000
Y = Country	5.9	1	5.9	2.5	0.117
T = Occupation	58.9	1	58.9	24.7	0.000
O = Order	10.4	1	10.4	4.4	0.037
R = Response	1.1	1	1.1	0.5	0.499
Interaction effects:					
AM	5.9	1	5.9	2.5	0.116
AC	7.4	1	7.4	3.1	0.077
AS	8.4	1	8.4	3.5	0.061
AY	41.3	1	41.3	17.3	0.000
AT	20.7	1	20.7	8.7	0.003
AO	0.1	1	0.1	0.0	0.866
AR	22.2	1	22.2	9.3	0.002
MC	23.1	1	23.1	9.7	0.002
MS	0.0	1	0.0	0.0	0.888
MY	9.9	1	9.9	4.1	0.042
MT	6.8	1	6.8	2.9	0.091
MO	6.4	1	6.4	2.7	0.102
MR	2.2	1	2.2	0.9	0.338
CS	2.9	1	2.9	1.2	0.274
CY	21.1	1	21.1	8.8	0.003
CT	10.1	1	10.1	4.3	0.039
CO	0.1	1	0.1	0.0	0.860
CR	1.1	1	1.1	0.5	0.493
SY	1.7	1	1.7	0.7	0.396
ST	2.0	1	2.0	0.8	0.358
SO	0.5	1	0.5	0.2	0.649
SR	0.9	1	0.9	0.4	0.536
YT	7.8	1	7.8	3.3	0.071
YO	41.6	1	41.6	17.4	0.000
YR	35.0	1	35.0	14.7	0.000
TO	16.8	1	16.8	7.1	0.008
TR	5.2	1	5.2	2.2	0.141
OR	28.5	1	28.5	12.0	0.001

Note: Repeated-measures ANOVA designs use the mean square associated with the specific treatment–subject interaction as the *F* ratio denominator. None of the higher-order interactions were significant at a 0.01 level.

between the analysts and bankers, albeit relatively small, could restrict the usefulness of the overall analysis, the relevance of the experimental factors to each occupational group was analyzed separately.

Group Analysis

Table 2 indicates that the mean scores for the two security analyst subject groups for each of the four independent variables are above the mid-point of the response scale for each level 1 treatment and below the mid-point for each level 2 treatment (see Fig. 1 for the treatment levels). These differences are consistent with the direction of the hypothesized relationships. The percentage of Australian security analysts

Table 5. Variance explained by significant effects for all subjects

Effect	<i>F</i>	ω^2	Relative ω^2
Accounting issue	603.7	0.127	0.516
Management consulting services	100.5	0.021	0.086
Competition	128.8	0.027	0.110
Audit firm size	221.5	0.046	0.187
		<u>0.221</u>	<u>0.899</u>
Occupation type	24.7	0.005	0.021
Accounting issue – country	17.3	0.003	0.012
Accounting issue – occupation type	8.7	0.002	0.008
Accounting issue – response	9.3	0.002	0.008
Management consulting services – competition	9.7	0.002	0.008
Competition – country	8.8	0.002	0.008
Country – order	17.4	0.003	0.012
Country – response	14.7	0.003	0.012
Occupation type – order	7.1	0.001	0.004
Order – response	12.0	0.002	0.008
		<u>0.246</u>	<u>1.000</u>

per Table 3 who agree with the direction of the hypothesized effects ranges from 75.5 percent for the nature of the accounting issue to 93.9 percent for the extent of competition for clients amongst audit firms. The range for their Canadian counterpart was from 66.0 percent for the size of the audit firm to 86.0 percent for the nature of the accounting issue.

Even though the overall analysis indicates that the two analyst groups are more similar to one another than they are to their fellow countrymen bankers, the data in Tables 2 and 3 suggest noticeable differences, as well. For instance, the relative importance of each main effect appears to differ between the two groups of analysts whether measured by the difference between the mean scores or the extent of agreement with the direction of the hypothesized main effect. Therefore, the factor “country” was included in subsequent analysis.

The more sensitive ANOVA results presented in Table 6 indicate that the country of origin was not a significant factor. The four hypothesized main effects (A, M, C, S) continued to be significant. In addition, the ANOVA results indicated that three of the first-order interactions were significant at a 0.01 level. When the ω^2 statistic was computed for the effects identified as being significant in the ANOVA results, the interaction effects were found to account only for 1.5 percent of the explained variance. The four main effects accounted for 25.7 percent of the variance for the security analyst subjects (22.1 percent for “all subjects” per Table 5) with the nature of the accounting issue clearly continuing to be the major determinant.¹⁶

A comparison of the mean scores reported in Table 2 for the two groups of bankers indicated a fairly high degree of similarity between them in terms of their average responses and, apparently, either a lower degree of concern or a more conservative attitude than the security analyst subjects. Once again the differences (all of which were significantly different at a 0.01 level; except for management consulting services for Canadian bankers which had a $p = 0.012$) were in the hypothesized direction. The percentage of Australian bankers per Table 3 who agreed with the hypothesized directional effects ranged from 69.6 percent for the nature of the

Table 6. Analysis of variance for all main effects and first-order interaction for analysts

Source of variation	SS	df	MS	<i>F</i>	<i>p</i>
Main effects:					
A = Accounting issue	895.5	1	895.5	353.6	0.000
M = Management consulting service	144.8	1	144.8	57.2	0.000
C = Competition	188.9	1	188.9	74.6	0.000
S = Audit firm size	204.4	1	204.4	80.7	0.000
Y = Country	3.9	1	3.9	1.5	0.216
O = Order	0.0	1	0.0	0.0	0.907
R = Response	2.3	1	2.3	0.9	0.341
Interaction effects:					
AM	1.8	1	1.8	0.7	0.403
AC	0.2	1	0.2	0.1	0.788
AS	1.9	1	1.9	0.8	0.385
AY	9.9	1	9.9	3.9	0.048
AO	2.1	1	2.1	0.8	0.364
AR	0.1	1	0.1	0.0	0.830
MC	26.0	1	26.0	10.3	0.001
MS	0.4	1	0.4	0.2	0.693
MY	14.8	1	14.8	5.8	0.016
MO	0.0	1	0.0	0.0	0.942
MR	2.9	1	2.9	1.1	0.285
CS	4.8	1	4.8	1.9	0.170
CY	42.7	1	42.7	16.8	0.000
CO	1.7	1	1.7	0.7	0.419
CR	0.0	1	0.0	0.0	0.978
SY	16.1	1	16.1	6.3	0.012
SO	2.4	1	2.4	0.9	0.333
SR	0.0	1	0.0	0.0	0.951
YO	22.6	1	22.6	8.9	0.003
YR	4.6	1	4.6	1.8	0.177
OR	2.6	1	2.6	1.0	0.307

Note: Repeated-measures ANOVA designs use the mean square associated with the specific treatment–subject interaction as the *F* ratio denominator. None of the higher-order interactions were significant at a 0.01 level.

accounting issue to 87.0 for the size of the audit firm. The range for the Canadian bankers was from 71.0 percent for management consulting services to 83.7 percent for the size of the audit firm.

Table 7. Variance explained by significant effects for all analysts

Effect	<i>F</i>	ω^2	Relative ω^2
Accounting issue	353.6	0.161	0.592
Management consulting services	57.2	0.026	0.096
Competition	74.6	0.034	0.125
Audit firm size	80.7	0.036	0.132
		0.257	0.945
Management consulting services – competition	10.3	0.004	0.015
Competition – country	16.8	0.007	0.025
Country – order	8.9	0.004	0.015
		0.015	0.055
		0.272	1.000

Table 8. Analysis of variance for all main effects and first-order interactions for bankers

Source of variation	SS	df	MS	F	p
Main effects:					
A = Accounting issue	583.6	1	583.6	260.0	0.000
M = Management consulting service	100.3	1	100.3	44.7	0.000
C = Competition	126.0	1	126.0	56.2	0.000
S = Audit firm size	325.8	1	325.8	145.2	0.000
Y = Country	1.0	1	1.0	0.4	0.506
O = Order	17.6	1	17.6	7.8	0.005
R = Response	0.0	1	0.0	0.0	0.960
Interaction effects:					
AM	4.3	1	4.3	1.9	0.168
AC	10.7	1	10.7	4.8	0.029
AS	7.0	1	7.0	3.1	0.077
AY	37.2	1	37.2	16.6	0.000
AO	1.0	1	1.0	0.4	0.511
AR	37.4	1	37.4	16.6	0.000
MC	3.6	1	3.6	1.6	0.208
MS	0.1	1	0.1	0.0	0.857
MY	0.1	1	0.1	0.0	0.827
MO	13.5	1	13.5	6.0	0.014
MR	0.3	1	0.3	0.1	0.737
CS	0.1	1	0.1	0.0	0.834
CY	0.2	1	0.2	0.1	0.783
CO	0.0	1	0.0	0.0	0.939
CR	2.0	1	2.0	0.9	0.343
SY	4.8	1	4.8	2.2	0.143
SO	1.4	1	1.4	0.6	0.428
SR	1.8	1	1.8	0.8	0.374
YO	18.4	1	18.4	8.2	0.004
YR	43.4	1	43.4	19.3	0.000
OR	37.5	1	37.5	16.7	0.000

Note: Repeated-measures ANOVA designs use the mean square associated with the specific treatment–subject interaction as the *F* ratio denominator. None of the higher-order interactions were significant at a 0.01 level.

Table 9. Variance explained by significant effects for all bankers

Effect	F	ω^2	Relative ω^2
Accounting issue	260.0	0.101	0.446
Management consulting services	44.7	0.017	0.075
Competition	56.2	0.022	0.097
Audit firm size	145.2	0.056	0.247
		0.196	0.865
Order	7.8	0.003	0.013
Accounting issue – country	16.6	0.006	0.026
Accounting issue – response	16.6	0.006	0.026
Country – order	8.2	0.003	0.013
Country – response	19.3	0.007	0.031
Order – response	16.7	0.006	0.026
		0.031	0.135
		0.227	1.000

Table 10. Subjects' judgment models from ANOVA^a

Effect	Subject Number ^b																	
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
A	29	59	49	—	—	—	—	—	—	—	—	84	96	96	36	56	19	—
M	29	—	—	—	55	—	—	—	58	30	—	05	—	—	—	—	05	16
C	—	24	—	59	—	22	—	38	23	—	—	08	—	—	—	—	19	16
S	22	—	—	—	—	47	—	—	12	—	—	—	—	—	36	14	50	46
Total	80	83	49	59	55	69	—	38	93	30	—	97	96	96	72	70	93	78
Effect	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
A	53	19	23	29	13	27	—	—	100	72	69	—	37	—	88	—	96	28
M	—	—	—	29	19	—	—	14	—	10	12	—	25	—	—	33	—	06
C	—	51	—	17	—	27	26	08	—	10	12	—	16	—	10	—	—	15
S	—	—	46	—	44	—	34	65	—	—	04	26	09	—	—	—	—	45
Total	53	70	69	75	76	54	60	87	100	92	97	26	87	—	98	33	96	94
Effect	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52		
A	—	—	56	94	—	67	—	—	—	—	47	78	74	88	—	32		
M	—	—	—	—	12	—	—	—	—	39	—	07	17	—	—	09		
C	—	48	—	—	45	21	36	—	—	30	—	07	—	05	—	32		
S	—	26	—	06	26	—	—	—	—	—	—	—	05	—	—	—		
Total	—	74	56	100	83	88	36	—	—	69	47	92	96	93	—	73		
Effect	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
A	92	94	—	—	—	81	—	25	92	—	100	—	19	87	79	100	79	—
M	—	—	—	—	78	—	—	—	03	52	—	15	19	—	—	—	—	—
C	—	—	—	27	17	—	49	—	—	—	—	—	—	—	—	—	—	—
S	—	03	—	27	03	—	27	—	—	—	—	53	44	—	—	—	—	—
Total	92	97	—	54	98	81	76	25	95	52	100	68	82	87	79	100	79	—
Effect	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
A	—	93	—	52	—	—	—	68	—	98	—	—	96	88	—	83	12	—
M	—	—	—	—	—	—	—	—	—	—	29	—	—	—	—	—	42	—
C	—	—	—	—	—	—	—	—	—	—	29	—	—	—	—	—	25	53
S	—	—	—	—	—	—	—	—	—	—	—	92	—	—	—	—	—	—
Total	—	93	—	52	—	—	—	68	—	98	58	92	96	88	—	83	79	53
Effect	89	90	91	92	93	94	95	96	97	98	99	100	101	102				
A	94	54	—	100	—	—	87	—	—	98	58	—	33	17				
M	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
C	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
S	—	18	—	—	—	—	—	—	—	—	—	—	33	69				
Total	94	72	—	100	—	—	87	—	—	98	58	—	66	86				
Effect	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A	—	16	—	—	—	—	—	—	39	—	64	—	—	71	100	—	—	—
M	50	16	—	32	—	69	43	—	—	—	—	—	28	—	—	29	—	—
C	—	40	—	—	—	22	—	—	—	—	09	—	—	—	—	—	—	—
S	—	—	—	41	—	—	—	56	22	—	18	—	—	—	—	—	—	—
Total	50	72	—	73	—	91	43	56	61	—	91	—	28	71	100	29	—	—

continued...

Table 10 continued...

Effect	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138
A	–	–	60	–	–	–	93	–	–	–	–	22	–	–	94	20	–	–
M	37	56	–	68	35	22	–	–	–	37	36	–	57	26	–	29	–	–
C	–	22	–	–	25	63	–	71	–	–	–	22	–	26	–	41	–	–
S	–	–	–	–	25	–	–	–	–	–	–	–	15	–	02	–	–	–
Total	37	78	60	68	85	85	93	71	–	37	36	44	72	52	96	90	–	–
Effect	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156
A	–	85	–	–	–	–	56	–	–	–	–	79	–	49	88	–	–	80
M	14	–	–	–	–	–	–	–	–	32	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	32	35	–	68	15	–	–	–	20
S	68	12	–	–	–	–	–	–	–	–	35	–	–	–	–	–	–	–
Total	82	97	–	–	–	–	56	–	–	64	70	79	68	64	88	–	–	100
Effect	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172		
A	–	94	47	58	40	42	67	87	34	62	–	61	–	56	26	32		
M	–	–	–	–	–	16	–	–	–	15	28	–	–	–	09	–		
C	–	–	22	–	–	–	–	–	–	–	–	–	–	–	–	–		
S	–	–	–	30	–	16	–	06	34	–	–	–	–	–	52	32		
Total	–	94	69	88	40	74	67	93	68	77	28	61	–	56	87	64		
Effect	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190
A	66	–	23	52	39	–	–	88	–	62	–	87	–	–	51	–	38	14
M	–	–	–	–	14	–	42	–	56	–	–	–	–	–	–	–	–	14
C	–	32	–	–	25	–	–	–	33	–	–	–	–	–	–	–	–	44
S	–	–	43	–	14	–	–	–	–	12	37	06	57	–	–	–	–	14
Total	66	32	66	52	92	–	42	88	89	74	37	93	57	–	51	–	38	86
Effect	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208
A	–	–	53	–	92	60	–	–	71	70	39	–	–	10	–	92	72	–
M	–	–	–	–	–	05	–	–	–	–	–	–	–	–	–	03	–	–
C	–	–	20	–	03	05	–	52	–	12	–	–	–	–	–	–	09	–
S	56	–	13	–	–	21	–	–	17	–	–	–	–	90	–	–	–	–
Total	56	–	86	–	95	91	–	52	88	82	39	–	–	100	–	95	81	–
Effect	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223			
A	31	–	–	67	31	–	92	–	25	50	45	75	57	30	72			
M	31	–	22	–	–	–	07	–	–	–	–	–	–	–	–			
C	–	–	48	–	–	38	–	–	–	–	–	–	–	–	–			
S	–	–	13	14	–	–	–	66	25	50	17	–	23	30	–			
Total	62	–	83	81	31	38	99	66	50	100	62	75	80	60	72			

^a The values in the table are percentages. All interactions were used to estimate the error term. Thus interactions are not estimable.
^b Australian analysts (01 to 49); Canadian analysts (50 to 99); Australian bankers (100 to 168); and Canadian bankers (169 to 223).
Note: A = accounting issue; M = management consulting services; C = competition; and S = audit firm size.

The ANOVA results presented in Table 8 indicated that the bankers’ country of origin also was not significant. The four hypothesized main effects continued to be significant. In addition the order factor and five of the interactions were significant. As indicated in Table 9, the variance explained by these latter effects ranged from

0.3 percent to 0.7 percent. The main effects (A, M, C, and S) accounted for 19.6 percent of the variance for the banker subjects with the nature of the accounting issue and the size of the audit firm accounting for 44.6 percent and 24.7 percent, respectively of the relative explained variance.¹⁷

Since the relatively low variance explained by the experimental effects for each of the analyst and banker groups (25.7 percent and 19.6 percent, respectively) is an indicator of relatively large individual differences (low within-subject group consensus) a finer individual subject level of analyses was performed.¹⁸

Individual Analysis

A descriptive ANOVA model was constructed for each subject and an ω^2 statistic was computed for each significant main effect. Table 10, which reports the ω^2 values for each main effect for each subject, suggests a substantial diversity among the subjects as to which factors account for the most explained variance in their judgments. The variance explained ranged from zero percent (no factors significant) for 52 subjects (Australian Analysts (AA): 6; Canadian Analysts (CA): 15; Australian Bankers (AB): 19; and Canadian Bankers (CB): 12) to 100 percent for 9 subjects (AA: 2; CA: 3; AB: 2; and CB: 2) with the models explaining 90 percent or greater of the variance for 46 subjects (AA: 14; CA: 14; AB: 10; and CB: 8).

Individual differences existed among the subjects such that each main effect was considered to be the most important by at least one subject (nature of the accounting issue (A): 89 subjects; management consulting services, (M): 23 subjects; nature of the competitive environment (C): 18 subjects; and the size of the audit firm (S): 23 subjects, and each was considered to be the least important by at least one subject (A: 7 subjects M: 4 subjects; C: 6 subjects; and S: 10 subjects). Further indication of individual differences is evident in the number of factors which were significant to the subjects.¹⁹

Given the success of the individual ANOVA models in explaining within-subject variance the failure of the group models (Analysts: an average of 25.7 percent for the four main effects; and Bankers: an average of 19.6 percent for the four main effects) and the overall model (an average of 22.1 percent for the four main effects) reliably to account for response variance can be attributed to – and provides further evidence of – high between-subject response variability, both within groups and between groups.

Discussion

The results of the study are discussed in this concluding section. First, the relationship of the findings with prior audit research is examined. Next, the implications for auditing are discussed. Finally, the limitations of the study are examined and suggestions are made for further research.

Relationships with Prior Audit Research

Studies in the United States dealing with auditor–client conflict generally have concluded that management will be less likely to persuade an auditor or that financial statement users will perceive auditors as being less likely to acquiesce to management demands when the accounting issue under dispute is the subject of a more (rather than a less) explicitly specified accounting standard. The empirical results of this study are consistent with the findings of the US studies.

Studies of the relationship between the provision of management consulting services and variously operationalized perceptions of auditor independence have had mixed results. Generally, the results have indicated a negative but not a very strong relationship. Although the management consulting service variable was significant for the banker subjects in the Shockley study, it accounted for less than one-half of 1 percent of the variance in their judgments. The results of the Knapp study were consistent with Shockley's findings in that the provision of management consulting services was significant but accounted for just less than 1.6 percent of the variance in his banker subjects' judgments. The empirical results of this study are consistent with both the Shockley and Knapp studies when the data either was analyzed on an overall basis (2.1 percent) or on a group basis (analysts: 2.6 percent; bankers: 1.7 percent). When individual models were constructed the percentage of variance explained by this factor exceeded 50 percent for ten subjects and was the single most important factor for 23 subjects.

In a study of auditor independence from the perspective of practicing auditors, Farmer et al. concluded that auditors by almost a 2 to 1 ratio were viewed as being more likely to accept a client's proposed accounting treatment in situations where the perceived risk of client loss is high versus a situation in which the perceived risk of client loss is low. In Shockley's study, competition among audit firms was the most significant experimental variable affecting perceptions of auditor independence. In the Knapp study, the competition variable was significant for his banker subjects; however, in terms of explanatory power, it accounted for less than one-half of 1 percent of the variance in their judgments. The results of the current study are reasonably consistent with the findings in the US studies. The nature of the competitive environment on an overall basis accounted for 2.7 percent of the variance in subjects' judgments. When analyzed at the group level it accounted for 3.4 percent of the variance in the analysts' judgments (Australian: 7.6 percent; Canadian: 0.8 percent) and 2.2 percent of the variance in the bankers' judgments (Australian: 2.2 percent; Canadian: 2.0 percent). The nature of the competitive environment, however, was identified as being the single most important factor for 18 subjects when individual models were analyzed.

Although the results in the United States have been mixed, most researchers have found that smaller audit firms are viewed as being more vulnerable to management pressures than larger firms. The results of this study are consistent with such a conclusion. On an overall basis, the size of the audit firm accounted for 4.6 percent of the variance in subjects' judgments. At the occupational group level of analysis it accounted for 3.6 percent of the variance in analysts' judgments (6.4 percent for the Australian analysts and 1.7 percent for the Canadian analysts) and for 5.6 percent of

the variance in bankers' judgments (Australian bankers: 4.8 percent; Canadian bankers: 6.6 percent). When individual models were constructed, the percentage of explained variance exceeded 50 percent for at least 13 subjects.

Implications

The complexities of the relationships between auditors and clients is evidenced, in part, by the considerable individual differences found in the perceptions of the subjects in this study. Furthermore, members of the financial community are becoming more aware of the existence of considerable conflict in audit engagements, and such awareness has led bodies, such as the Macdonald Commission, to recommend mechanisms to reduce the sources of conflict. Foremost among these recommendations are those directed at improving accounting standards, narrowing accounting alternatives and increasing financial disclosure in financial statements and elsewhere in annual reports. In addition the Commission has recommended the creation of a more independent audit committee with expanded responsibilities as another means of reducing the potential negative impact of auditor-client conflicts.

If the integrity in financial reporting is to be improved and if the auditor's role in enhancing such integrity is to be increased, then the standard-setters must take immediate steps to improve accounting standards and the profession must take steps to ensure that the auditor-client contextual environment is structured to ensure at least a symmetrical dependency relationship. If the standard setting bodies maintain a philosophy of encouraging flexibility (adaptability of accounting methods to the circumstances), then the profession has an obligation to see that the permitted flexibility is not abused. If the financial community perceives the flexibility and the auditor's acceptance of it as resulting in unfair and biased financial reporting, then the integrity of financial reporting and the credibility of the auditor will be suspect. Researchers must continue to study means to reduce the frequency of conflict and must identify improved mechanisms for managing the conflict.

Limitations

The findings and implications of this study should be considered in the light of a number of caveats concerning the research methodology. Every research design has its strengths and weaknesses. The first limitation of this study concerns its generalizability to other subjects. Since the subjects were not randomly selected from the population of all security analysts and bankers, statistical inferences cannot be made to those populations. For practical reason, contact persons were involved in the subject selection and thus systematic biases in the selection process cannot be ruled out.

A second limitation relates to the generalizability to other situations. Only four of the many factors in the contextual relationships between auditors and clients were manipulated in the experimental design, and each of these variables was operationalized in only two of many possible ways. Furthermore, the design was nonrepresentative in the sense that it did not take into consideration the nonzero intercorrelations that probably exist between the independent variables in an actual

audit setting. Instead, an orthogonal design was used and thus the design itself may account for some of the individual differences observed. Did the repeated-measures design oversensitize the subjects to the independent variables and thereby enable them to predict the hypotheses and, perhaps, then respond cooperatively?

Finally, the internal validity may have been threatened either by the factors included/excluded or by their operationalization. For instance, what if the financial health of the client had been depicted as being poor instead of good, or had been manipulated instead of having been treated as a constant?

Suggestions for Further Research

The findings of this study suggest that research into a number of areas might be profitable. First, a study should be conducted with either alternative operationalizations of the existing independent variables or with the inclusion of additional (or alternative) variables. The presence/absence of a competent and independent audit committee, for instance, could influence users' perception. Second, such a study might be extended to include other members of the financial community.

Next, since this research found that these four factors affect users' perceptions, a study should be conducted to see whether investment/lending decisions also are affected. Finally, since there were so many individual differences among the subjects' perceptions, there should be research conducted using representative (instead of orthogonal) designs to assess whether the individual differences persist.

Notes

1. The Commission was established by the Board of Governors of the Canadian Institute of Chartered Accountants in February 1986, with the following mandate: "The Commission is charged to study the public's expectations of audits. Where a gap exists between what the public expects or needs and what auditors can and should reasonably expect to accomplish, the Commission is charged to develop conclusions and recommendations to determine how the disparity should be resolved."
2. A philosophy of preserving flexibility in accounting standards is evident in both the "Proposed Statements of Accounting Concepts" exposure draft series issued by the Accounting Standards Board and Public Sector Accounting Standards Board of the Australian Accounting Research Foundation and the accounting recommendations on "Financial Statement Concepts" issued by the Accounting Standards Committee of the Canadian Institute of Chartered Accountants. This shared philosophy was noted by Irvine, a Canadian representative on the Board of the International Standards Committee, in his characterisation of Australia and Canada as countries which emphasise the exercise of judgment and the United States as a country which develops a "mass of rules for a multitude of circumstances." Interesting overviews of the main approaches to standard setting in Australia and Canada appear in "Harmonization of Accounting Standards: Achievements and Prospects" published by the Organization for Economic Cooperation and Development.
3. The NCSC was established in 1978 by the Australian and State governments with delegated powers to achieve uniformity in the content and administration of laws relating to companies and in the regulation of the securities industry, in order to promote commercial certainty, reduce business costs, achieve greater efficiency in the capital markets and maintain, through suitable measures for their protection, the confidence of investors in the securities market (Bottrill and Humphry, 1986, p. 41).
4. Stanley M. Beck Q.C., and Paul G. Cherry, C.A., are respectively the chairman and the chief accountant of the Ontario Securities Commission.
5. Walker authored the consultative document, "'A True and Fair View' and the Reporting Obligations of Directors and Auditors" issued by the NCSC in which he advocated the establishment of parameters within which judgments about the adequacy of financial reporting are to be formulated.

6. A task force created in June 1986 by the Canadian Academic Accounting Association to provide the Macdonald Commission with input regarding the practice of public accounting and the environmental factors influencing it.
7. Nichols and Price (1976, p. 340) ... "with highly routine or structured auditing procedures and accounting principles we would argue that the firm would be less likely to pressure the auditor, and the auditor would be less likely to comply with the firm's wishes. ... The reason is simply that the costs to each party associated with such action both internal in terms of guilt and external because of possible sanction administered by third parties, are likely to be greater than rewards."
8. Studies by Schulte (1965), Titard (1971), Hartley and Ross (1972), Lavin (1976), Shockley (1981), and Knapp (1985), are representative of this research.
9. By Francis and Pollard (1979), and Gul (1987), in Australia and Dermer, et al. (1971), and Lindsay, et al. (1987), in Canada.
10. For example, a Research Report from The Conference Board expressed the following concern:
Many audit committees are currently concerned with another aspect of the outside auditing firm's independence, the delicate issue of whether non-audit management consulting by the auditor might weaken the firm's independence. Fear has been voiced by the SEC and other organizations that an accounting firm might find it difficult to oppose management over a controversial accounting practice if doing so jeopardized lucrative management consulting projects (as well as the audit work) [p. 19].
11. For instance, see the arguments of DeAngelo (1981), Watts and Zimmerman (1981), McConnell (1984), and Eichenseher and Shields (1985).
12. The President and the Chief Executive Officer (CEO) of the Securities Institute of Australia were contacted initially to identify the members of the Institute who would be most familiar with financial reporting issues. The CEO then randomly selected 100 of these members who were, in turn, sent a set of research materials including encouragement letters from the President of the Institute and from the Director of the Australian Accounting Research Foundation. In addition senior management in five major banks (ANZ; Commonwealth; National; State Bank of Victoria; and Westpac) selected 20 members from each of their banks who were familiar with financial reporting issues to participate in the study.
A sample of 100 analysts was randomly selected from a list of members identified by the President of the Toronto Society of Financial Analysts to be familiar with financial accounting issues. He also provided an "encouragement" letter to accompany the sets of research instruments. The Executive Director of the Institute of Canadian Bankers, through his Advisory Committee, identified five schedule "A" and one schedule "B" banks who were willing to participate in the study. Sample selection of Canadian bankers then paralleled the process employed with Australian bankers.
13. The size of the experiment without any fractionalization would have doubled (2^4 versus 2^5) had financial condition been treated as a variable to be manipulated rather than as a constant. Therefore, for practical reasons, the decision was made to treat financial condition as a constant factor in this study.
14. Four factors, in addition to the four experimental factors, were analyzed initially: Country (Australia/Canada), Occupation (analyst/banker), Order (version 1/version 2); and Response (early/late). Two versions of the research instrument were used to determine whether an order effect influenced the subjects' responses. Each version had a different random ordering of the cases and the independent variables within each case.
15. See Winkler and Hays (1975, pp. 786-789).
16. The comparative ω^2 data for the security analysts are:

Factor	Australian	Canadian
A	13.4	18.9
M	4.5	1.2
C	7.6	0.8
S	6.4	1.7
	31.9	22.6

17. The comparative ω^2 data for the bankers are:

Factor	Australian	Canadian
A	7.1	14.3
M	2.0	1.3
C	2.2	2.0
S	4.8	6.6
	16.1	24.2

18. This occurrence is consistent with the findings by Mayper, Doucet, and Warren in a study of auditors' materiality judgments. They recommended the finer individual analysis.
19. The number of factors significant for the subjects is:

Number of factors	Analysts		Bankers		Total
	Australian	Canadian	Australian	Canadian	
4	4	–	–	3	7
3	11	4	5	3	23
2	14	8	23	19	64
1	14	23	22	18	77
0	6	15	19	12	52
	49	50	69	55	223
Average	1.9	1.0	1.2	1.4	1.4

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Harmonization and International Transfers of Accounting and Related Information: A Laboratory Markets Investigation

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Key words: Experimental economics; Harmonization; International accounting; Information transfers; Laboratory markets

Abstract: *This study explores intra-industry transfers of information internationally between securities markets in harmonization and nonharmonization settings. Using a laboratory market for securities, experiments were conducted to explore security pricing with the earnings announcement (an accounting information source) and subsequent price announcement (a nonaccounting information source) of a similar, foreign security in each of the two settings. The findings suggest that harmonization plays an important role in enabling accounting information transfers, and that in the absence of harmonization nonaccounting information transfers may be important. Other findings include an increased variability in security prices in the nonharmonization setting, and an unanticipated price response in the harmonization setting to the price announcement of the foreign security. Because of the increasing importance of international business and the difficulty of testing hypotheses about harmonization in an empirical field setting, studies such as this may provide a useful way for exploring international financial reporting issues.*

As the ongoing internationalization of business and finance fosters the development of a global capital market system, there is increasing interest and concern as to the role of accounting and other financial information sources in securities pricing. In this study, using a laboratory market, we explore how the harmonization of financial reporting affects inter-market intra-industry information transfers. These information transfers are measured by comparing laboratory security price data in a setting of harmonization with price data in a setting of nonharmonization.

Our findings showed that in a harmonization setting securities were priced closer to their average payoffs¹ than in a nonharmonization setting. In the nonharmonization setting there was more reliance on nonaccounting information (external pricing

information) in securities pricing. The nonharmonization setting also showed a slightly higher variance in normalized average security prices. We also observed some interesting price responses in the harmonization group that we had not anticipated, but that mirror recent empirical evidence from capital markets research. The remainder of this paper is organized in the following way. The next section discusses harmonization and inter-market intra-industry information transfers. Then a model and hypotheses are presented. This is followed with a description of methods. The results are presented and discussed, and the paper is concluded.

Background

The globalization of capital markets raises questions as to the international role of accounting and financial reporting in security pricing. This paper explores information transfers between international securities markets.

There appear to be two general kinds of inter-market information transfers that are used by investors. First, investors use foreign security markets² prices and other nonaccounting information sources as predictors of price changes in their own market. Currently it is common to hear morning reports of security price activities in foreign security market as a basis for predictions of price changes in the American securities markets.³

A second source of inter-market information may be the financial reports and related information of foreign securities. Meek (1983a, 1985) studied a set of firms domiciled in countries outside the United States but traded on US exchanges. He found reactions of the foreign security prices in US security markets to both annual and interim financial reports.⁴ He concluded that "... financial accounting information does 'travel' across national boundaries ... depending on its country of origin."

It has also been shown that the financial reports of a firm provide information about other firms in its industry. Foster (1981), for instance, shows that the earnings announcement of an important firm of an industry provides a prediction of the earnings of other firms in that industry in the form of a security price effect. Strong-form market efficiency requires that market prices reflect all types of information, both public and private, of an asset. Such information, whether it be firm-specific, industry-specific, or economy-specific, will differ in the ease with which market participants can use it.

Dyckman and Morse (1986) indirectly refer to intra-industry price effects in discussing the implications of the oil embargo on oil company stock prices. They suggest that such an event will be more difficult for the market to impound precisely and instantaneously the first time it occurs, but that experience with this circumstance will lead to oil company stock prices adjusting more rapidly in the event of another embargo. Bowen et al. (1983) find capital market evidence of utility stock prices changing in response to the nuclear accident at Three-Mile Island. Even though the accident affected only one utility company, it had implications for all utilities, and the market understood and priced this fact.

Fischer and Palasvirta (1990) find that interdependence in the world stock market returns grew considerably in the period 1974–1988. This evidence points to the

existence of international effects of information on prices in capital markets. Since the international markets are responsive to each other, the quality of information used by those markets has a potentially far-reaching impact.

Intra-industry information transfers between foreign and domestic securities markets are impeded, in part, because of differences in financial reporting rules. These reporting rules vary widely among countries (Zeff, 1971; Arpan and AlHashim, 1984, Choi and Bavishi, 1982; Nobes and Parker, 1991; Nobes, 1988). Meek (1983b) showed that even most non-US firms traded on US securities markets did not use US generally accepted accounting principles (GAAP) in US reporting.

Various approaches to the harmonization of financial reporting standards have been seen as important in overcoming the difficulty in interpreting foreign financial reports.⁵ Although the First International Congress of Accountants was held in 1904, substantial progress in international efforts did not occur until the Tenth International Congress, in Australia in 1972, when the International Accounting Standards Committee (IASC) was formed. Taylor et al. (1986) and Doupnik (1987) argue that reductions in the differences between the financial reporting standards of most countries have been attained. Nevertheless, Weetman and Gray (1991) illustrate that substantial differences between the financial reporting of many countries remain.⁶

Because harmonization may be weak or absent, the inter-market intra-industry information transfers that occur between a foreign and domestic security market may be limited to nonaccounting information such as price. As an illustration, the abrupt decline of security prices in US security markets in the autumn of 1987 was immediately followed by declines in most other major security markets. When harmonization is strong, the inter-market intra-industry information transfers can include accounting and other financial information, to the extent that it can be interpreted by domestic investors.

Model and Hypotheses

Consider two similar, domestic equity markets operating simultaneously. Each market has one distinct equity security which can be traded by the investors of that market. These equity securities are essentially identical. Market investors have several pieces of information that they use to price the security. First, they have an *ex ante* probability density function around the possible returns on the security. Also, the investors receive information of a similar security trading in a foreign security market, the true earnings and closing price of which are strong predictors of the return they will earn on their own security.

Specifically, the investors receive (1) an earnings announcement of the foreign security which is transmitted to both markets at the start of trading, and (2) a closing price announcement of the foreign security which the participants in both markets receive during trading.

Because the financial reporting rules of the foreign market are different from those of the domestic market, the announced earnings of the foreign security are never the same as its true earnings, where the term "true earnings" means earnings as stated using the domestic market's financial reporting rules. However, if one of

the domestic markets receives a harmonized set of financial statements (that is, a set of financial statements adjusted to domestic financial reporting rules, revealing true earnings), then the investors of that market will be able to better price their own security based on the earnings announcement of the foreign security. Conversely, investors of the other domestic market may have to rely more on the closing price announcement of the foreign security in pricing their own security.

To illustrate, denote the two domestic markets as Market A and Market B. Further, assume that the participants of Market A and Market B both receive an earnings announcement concerning a similar stock traded in a foreign security market. The participants of Market B can harmonize the earnings announcement of the foreign security such that they know that the earnings announcement, e , signals that the closing price of the security ($p|e$) will fall in the range of $[l_B \dots h_B]$ with uniform probability. Suppose also that Market A receives the same earnings announcement but that the participants of Market A view the earnings announcement of e as signaling that the closing price of the security in which they trade will fall in the range of $[l_A \dots h_A]$ with uniform probability.

Assume a harmonization rule Φ such that:

$$[l_A < l_B \text{ and } h_A = h_B] | \Phi_u] \text{ and}$$

$$[h_A < h_B \text{ and } l_A = l_B] | \Phi_o]$$

where the subscript u denotes an understatement of true earnings, the subscript o denotes an overstatement of true earnings, and Φ_u and Φ_o occur with equal probability. If we assume that the participants in each market are homogeneous and risk neutral, then investors in market B, who are informed of Φ , will price the security closer to its realized payoff.⁷

Once the closing price of the foreign security, denoted c , is released, the participants of both markets will be able to gauge equally the underlying value of the security and correspondingly price it, denoted ($p|c$). It is assumed that the market participants of Markets A and B both anticipate that the underlying payoffs of the security will be in the range $[l_c \dots h_c]$ with $l_c \geq l_B$ and $h_c \leq h_B$ after c is released. The release of c can be shown to result in a larger price adjustment in Market A than in Market B since, given Φ_u :

$$\begin{aligned} E_A(p|c) - E_A(p|e) &= (l_c + h_c)/2 - (l_A + h_A)/2 \\ &= (l_c - l_A)/2 + (h_c - h_A)/2 \\ &= (l_c - l_A)/2 + (h_c - h_B)/2 \\ &> (l_c - l_B)/2 + (h_c - h_B)/2 \\ &= E_B(p|c) - E_B(p|e) \end{aligned}$$

and when given Φ_o :

$$\begin{aligned} E_A(p|e) - E_A(p|c) &= (l_A + h_A)/2 - (l_c + h_c)/2 \\ &= (l_A - l_c)/2 + (h_A - h_c)/2 \\ &= (l_B - l_c)/2 + (h_A - h_c)/2 \\ &> E_B(p|e) - E_B(p|c) \end{aligned}$$

The above discussions provide the motivation for the following hypotheses. First,

the harmonization rule, as described above, provides investors with better information as to the payoff of their securities. Harmonization thus facilitates inter-market intra-industry transfers of accounting information. Therefore:

H1: Given an earnings announcement of a foreign security, market participants in the harmonization setting will price the domestic securities closer to their average payoff than market participants in the nonharmonization setting.

Because it is more difficult for market participants in a nonharmonization setting to interpret accounting information reported by a foreign company, such participants will rely more heavily on nonaccounting information (as illustrated above, foreign security price). That is, in a nonharmonization setting, inter-market intra-industry transfers are reduced to non-accounting type information. Therefore:

H2: Given an announcement of a foreign security price following its earnings announcement, the domestic security price response will be larger in the nonharmonization setting than in the harmonization setting.

Furthermore, the anticipated direction of the price change in the domestic market should be consistent with the information revealed in the price. Given $E_A(p|e)$, if $(c|\Phi_u)$ occurs, hereafter termed “good news” (similarly, $(c|\Phi_o)$ is “bad news”), then the market participants’ expectations about the payoff of their securities will be higher than $E_A(p|e)$; therefore $E_A(p|c) > E_A(p|e)$, and vice versa.

H3: Given an announcement of a foreign security price following its earnings announcement the domestic security price response in the nonharmonization setting will be consistent with the new information contained in the foreign security price.

Finally, related to H1, the greater uncertainty about the final payoff of the domestic security in the nonharmonization setting should lead to a more heterogeneous set of expectations among investors, resulting in a greater variance in average security pricing before the foreign security price is revealed. Similarly participants’ final average wealth should vary more in the nonharmonization setting.

H4: Given an earnings announcement of a foreign security, the prices of the domestic securities will vary more in the nonharmonization setting than in the harmonization setting.

H5: The final ending wealth of participants in each period in the nonharmonization setting will vary more than in the harmonization setting.

Method

Evidence from laboratory market settings has been successfully used to test predictions of the efficient-market hypothesis related to insider information since by definition, private information effects on public stock prices are difficult to identify. Plott and Sunder (1982) find that private information known by a subset of laboratory market

participants becomes fully impounded into asset prices, that is, asset prices converge to the rational expectations equilibrium prediction. Copeland and Friedman (1991) compare strong-form efficiency predictions to those in a partial information revelation setting and find that a strong-form efficiency model with full revelation of private information explains asset prices better than either a nonrevealing or a partially revealing expectations model. Thus, laboratory market participants price even privately held information. In our paper the laboratory setting is consistent with that of the international market; information is transmitted from one economy to another, but the financial reporting rules are not the same in all economies. Strong-form efficiency should hold because information releases are public. Since the information is more precise in the harmonization than in the nonharmonization setting, the harmonization setting should allow the participants to determine more easily and precisely the appropriate effect of the information release on market price. We examine the market reactions to these levels of precision in an effort to identify potential usefulness of the international harmonization of financial reporting standards on asset prices.

The experiments were conducted as double-oral auction laboratory markets for securities, with standard laboratory market trading rules, using a program that we developed (called "Labmarket") which monitored and displayed all offers to buy and sell, buy/sell transactions, and changes in participant wealth of points and securities. One director keyed offers and other data into the program during the market. The program displayed all pertinent information, as described above, on a wall screen using an LCD overhead projector.

The participants were 29 first year MBA students, who were randomly divided into the harmonization and nonharmonization groups. Participants were endowed with points and securities. In order to motivate trading in securities, half of the participants were endowed with 7 points and 4 securities, while the remaining participants were endowed with 14 points and 2 securities. The possible range of payoffs of each security was 0–6 points (in increments of tenths), with a uniform distribution over possible payoffs.

Participants began each of two practice market periods and ten experimental market periods⁸ with their original endowment of points and securities. Before each market opened, participants were given an earnings announcement of a security in a "foreign" market. The earnings announcement could range from 2 to 4 points. Participants were informed that the foreign security was very similar to their own security, and that the true earnings of the foreign security represented the mean of a two-point range of the final payoffs of their security. Participants were also informed, however, that the financial reporting rules in the foreign security's market were different than in their own. The result of this was that the true earnings of the foreign security were always exactly 1 point higher or lower than announced – the probability of either occurrence being equal.

In the nonharmonization setting, then, an earnings announcement of the foreign security of 4 points meant that the true earnings of the foreign security were either 3 points or 5 points. Table 1 shows the ex ante probabilities of security payoffs for the nonharmonization group in this example.

The expected average payoff of the security is therefore $(2 \times 0.167) + (3 \times 0.167) + (4 \times 0.333) + (5 \times 0.167) + (6 \times 0.167)$, or 4 points.

Table 1. Range of possible final payoffs on securities for the nonharmonization group if the foreign security earnings announcement is 4^a

Earnings announced		4				
True earnings		3(.5)			5(.5)	
Security value	2(.167)	3(.167)	4(.167)	4(.167)	5(.167)	6(.167)

^aProbability of occurrence is noted in parentheses.

In contrast, the harmonization group was given the “harmonization rule”. The harmonization rule informed participants in the harmonization group that the foreign security’s announced earnings were either overstated or understated with respect to true earnings. Following the above illustration, the revelation of “overstated” as the harmonization rule allowed participants in this group to deduce that the true earnings of the foreign security were 4 – 1, or 3 points. For the harmonization group, then, the expected average payoff of the security is therefore $(2 \times 0.33) + (3 \times 0.33) + (4 \times 0.33)$ or 3 points.

One minute into each security market, trading was halted, and both the harmonization and nonharmonization groups received a second piece of information. This information was the closing price of the foreign security. Participants were informed that the investors in the foreign market always priced the foreign security within one-tenth of a point of its true earnings. After the announcement of the closing price of the foreign security, all outstanding offers to buy and sell were cleared and trading was reopened for an additional minute.

At the end of the 2-minute market the payoff of the security for that market period was announced. This value had to fall in the two point range around the mean of the foreign security’s true earnings. Participants converted their securities into points at the announced payoff, and computed total ending points. This was verified by the monitoring program. Then a random draw was made to determine which participants were “winners” for that market period. The draw was from a uniform distribution of 1 to 40, in tenths. To be a winner, participants needed to have at least as many points as the number drawn. Participants then returned to their original endowments and a new market period opened. At the end of the last market period, a final draw was held to determine which market would count towards winning a prize of \$10. Participants who were winners in the market period drawn received a cash prize of \$10. All participants received course credit for participating in this research, regardless of their performance.

Results

The earnings announcements, harmonization rules, price announcements, and security prices for both the harmonization and nonharmonization settings are shown in Table 2. These results show that the harmonization group tended to price securities closer to their average payoff, not only with the earnings announcement (0.33 points versus 0.97 points), but persisting even into final pricing (0.23 versus 0.28 points). The substantial decrease in the difference suggests the importance of the nonaccounting (price) information announcement for the nonharmonization group. Prior to the price announcement, the nonharmonization group also tended to optimism about the

Table 2. Earnings announcements, harmonization rules, price announcements, and security prices: harmonization and nonharmonization settings

Mkt period	Earnings announced	Harmonization rule	Average price		Absolute distance from average payoff		Price Announ.	Average price		Absolute distance from average payoff	
			Harm.	Non harm.	Harm.	Non harm.		Harm.	Non harm.	Harm.	Non harm.
1	4	Underreported	5.00	4.25	0.00	0.75	5.1	5.00	4.75	0.00	0.25
2	5	Overreported	4.63	4.90	0.63	0.90	4.0	4.43	3.43	0.43	0.57
3	2	Overreported	1.80	2.15	0.80	1.15	1.0	1.63	1.10	0.63	0.10
4	5	Underreported	5.60	5.14	0.40	0.86	5.9	5.80	5.73	0.20	0.27
5	4	Overreported	3.00	4.03	0.00	1.03	2.9	2.70	2.50	0.30	0.50
6	3	Overreported	2.23	3.47	0.23	1.47	2.0	2.10	2.23	0.10	0.23
7	2	Underreported	2.80	2.28	0.20	0.72	3.0	3.13	3.00	0.13	0.00
8	4	Underreported	5.00	4.34	0.00	0.66	4.9	4.97	4.70	0.03	0.30
9	3	Underreported	4.05	3.00	0.05	1.00	4.0	4.00	4.10	0.00	0.10
10	2	Overreported	2.00	2.15	1.00	1.15	1.1	1.50	1.45	0.50	0.45
Mean			3.61	3.57	0.33	0.97		3.53	3.30	0.23	0.28

unknown harmonization rule, consistently (8 of 10 periods) pricing the security above the foreign security’s earnings announcement.

In H1, it was hypothesized that given an earnings announcement of a foreign security, market participants in the harmonization setting will price the domestic securities closer to their ending average payoff than market participants in the nonharmonization setting. As presented in Panel A of Table 3, the average absolute difference between true earnings and average trade price in the harmonization setting is not greater than zero, while the average difference in the nonharmonization setting is greater than zero at $\alpha < 0.005$. Panel B compares the average difference between true earnings and average trade price between the two settings. The nonharmonization group’s difference was significantly higher than the harmonization’s group difference at $\alpha < 0.001$. That is both of these tests show that in the nonharmonization setting, prices set by the market participants as a result of the information contained in the earnings announcement are farther from true earnings than those set by those participants with the earnings announcement accompanied by a harmonization rule.

Table 3. True earnings versus price following foreign security price announcement:

	Harmonization	Nonharmonization
<i>A: Harmonization and nonharmonization settings individually compared against a null of 0</i>		
Average absolute value of true earnings – price	0.331	0.969
Standard deviation	0.365	0.246
<i>t</i> Test, mean greater than zero	0.91	3.94
(d.f. = 8)	($\alpha > 0.40$)	($\alpha < 0.005$)
<i>B: Harmonization. and nonharmonization settings compared</i>		
Difference	0.638	
Combined estimate of standard deviation	0.139	
<i>t</i> Test, difference greater than zero (d.f. = 15)	4.59	
	($\alpha < 0.001$) ^a	

^aadjusted for unequal variances and sample sizes

Table 4. Comparison of price responses to the foreign security price announcement:

	Harmonization	Nonharmonization
<i>A: Harmonization and nonharmonization settings individually compared against a null of 0</i>		
Average absolute value of price response	0.191	0.926
Standard deviation	0.154	0.410
<i>t</i> Test, mean greater than zero	1.24	2.26
(d.f. = 8)	($\alpha > 0.20$)	($\alpha < 0.05$)
<i>B: Harmonization and nonharmonization settings compared</i>		
Difference in price response	0.735	
Combined estimate of standard deviation	0.139	
<i>t</i> Test, difference greater than zero (d.f. = 11)	5.29	
	($\alpha < 0.001^*$)	

^aadjusted for unequal variances and sample sizes

In H2 we hypothesized that given an announcement of a foreign security price following its earnings announcement, the domestic security price response will be larger in the nonharmonization setting than in the harmonization setting. We tested this hypothesis two ways. First, we tested the price response against a null hypothesis of no response. As shown in Table 4, Panel A, the average absolute value⁹ of the price response to the foreign security price announcements in the harmonization setting is 0.191 which is not significantly greater than zero.¹⁰ In the nonharmonization setting the average price change is 0.926, significantly greater than zero at $\alpha < 0.05$. Second, we compared the differences in the price responses between the harmonization and nonharmonization setting. Comparison of the two means in Panel B shows that the average price change in the nonharmonization setting is greater than that in the harmonization setting at $\alpha < 0.001$.

We also hypothesized in H3 that, given an announcement of a foreign security price, the domestic security price response in the nonharmonization setting will be consistent with the new information contained in the foreign security price. That is, good news should be followed by price increases in the nonharmonization setting, while bad news should be followed by price decreases. Table 5 shows the price responses to good news and bad news in both the harmonization and nonharmonization

Table 5. Price responses to “good news” and “bad news”

Mkt. period	Nonharmonization		Harmonization	
	Good news	Bad news	Good news	Bad news
1	0.50		0.00	
2		−1.47		−0.19
3		−1.05		−0.18
4	0.59		0.20	
5		−1.53		−0.30
6		−1.24		−0.13
7	0.72		0.33	
8	0.36		−0.03	
9	1.10		−0.05	
10		−0.70		−0.50
Mean effect	0.65	−1.20	0.09	−0.26
Expected effect	1.00	−1.00	0.00	0.00

settings. As expected, in the nonharmonization setting, prices always increased following good news and decreased following bad news, at an average of 0.65 and -1.20 points respectively. What we did not anticipate was a similar price response by the harmonization group. While the average price response was only 0.09 and -0.26 points respectively, we found the consistency of the signs of these changes surprising: 8 of 10 were in the "right" direction. We also noted that for both groups the price response to bad news was more marked than to good news.

A nonparametric sign test was used to analyze the consistency of the price movements. Ten of 10 correctly predicted price response signs for the nonharmonization group is significant at a < 0.001 . Eight of 10 correctly predicted price response signs for the harmonization group is significant at a < 0.005 . The support given by the above tests to the first three hypotheses is consistent with our argument that harmonization promotes accounting information transfers, while in a setting absent harmonization, nonaccounting information transfers are more informative.

In H4 we hypothesized that given an earnings announcement of a foreign security, the pricing of the domestic securities will vary more in the nonharmonization setting than in the harmonization setting. To test this hypothesis, we normalized each security's prices for each market period from the opening of the market to the point of the earnings announcement on corresponding average prices for that period and setting¹¹. We then grouped the normalized prices across the ten periods by experimental setting and computed the variances for both settings. Our operational hypothesis was that the variances of the normalized prices of the nonharmonization group would be larger than those of the harmonization group. The variance of the normalized prices in the nonharmonization setting was 0.0107, and in the harmonization setting was 0.0068. Using an F test to analyze the equality of the variances, we rejected the related null hypothesis of equal variances ($F = 1.562$, $\alpha < 0.05$). This finding suggests that an absence of harmonization tends to increase heterogeneity of beliefs as to a security's final payoff and thus increases the variance in security pricing.

Similarly, in H5 we hypothesized that the final ending wealth of participants in each period in the nonharmonization setting would vary more than in the harmonization setting. To test this hypothesis, we normalized each participant's ending wealth on average wealth for that period and setting and then computed the variances in wealth for each period for each setting. The variance of normalized ending wealth in the nonharmonization setting was 0.0174, and in the harmonization setting was 0.0175. As above, an F test was employed. We were unable to reject the null hypothesis ($F = 1.002$, $\alpha > 0.25$). We conjecture that these results may be due to additional noise that is added when trading resumes after the price announcement. That is, any wealth variance effect present prior to the release of the price announcement may be obscured by the time the market closes.

Concluding Remarks

In this study, we used a laboratory securities market setting to explore a role for harmonization in facilitating the transfer of intra-industry accounting and nonaccounting information between security markets. We found that harmonization facilitated

the international transfer of intra-industry accounting information and that, absent harmonization, nonaccounting (foreign security price) information transfers tended to occur. Since foreign security earnings announcements preceded price announcements, harmonization provided more timely information for security pricing. Therefore reliance on price information was strictly inferior to harmonization in our study. We also found that nonharmonization tended to increase both the variability in security pricing and the optimism of nonharmonization participants as to the nature of the unknown harmonization rule. This suggests an important potential role for harmonization in reducing disparities in investing results among investors.

It was interesting to note that participants responded more strongly to bad news than to good, consistent with Brown et al.'s (1988) implication of risk aversion (although it is not clear that our participants were risk averse).¹² This could form the basis of an extension of our study. We also found that the absence of harmonization tended to increase the variability of security pricing. We were somewhat surprised to find a price response in the harmonization group to the price announcement of the foreign security. Since the harmonization group was fully informed about the true earnings of the foreign security at the point of the earnings announcement, the foreign security's price announcement theoretically provided no new information. However, the harmonization group clearly reacted to the price announcement as if surprised. This is not inconsistent with the empirical findings of studies such as Bernard and Thomas (1991). The findings of our study may indicate that confirmatory evidence reduces some sort of investor uncertainty as to outcomes. This also may form the basis for an extension of the present study.

There are several features that should be considered in interpreting our results. Our market participants were novices – not trained or sophisticated investors. They had little to lose regardless of their results. Finally, our results may differ depending on the risk preferences of participants.

Nevertheless, as the international dimensions of financial reporting and the uses of accounting information continue to expand, it is important to test the effect of harmonization in securities markets. Because of the difficulty in assessing this role in an empirical, field environment, laboratory market studies such as this one may provide useful insights into roles of financial reporting and accounting in international business and finance.

Notes

1. In our study, there was a range of possible outcomes of securities even with full information. We define average payoff as the mean outcome of a security in each period with full information.
2. We use the term "foreign security market" as a relative term in this paper. That is, for some particular investor there is a local, domestic market in which the investor trades domestic securities, and a distant, foreign market in which the investor does not trade.
3. These predictions are based both upon American securities that are traded in foreign markets and foreign markets themselves.
4. However, it is not clear from these studies whether the US price response could be associated with the foreign market price response, as an alternative explanation to the earnings announcement response.
5. We refer specifically to the "Absolute Uniformity Model," the "Circumstantial Conformity Model," and the "Purposive Uniformity Model."

6. In the case of the study cited, the United States as compared with the United Kingdom, Sweden, and the Netherlands.
7. Although this will not systematically hold if investors are strongly risk seeking or strongly risk averse.
8. The number of market periods was not known by participants at the outset of the experiment.
9. We use absolute changes to avoid a cancellation effect, particularly in the nonharmonization setting, because of alternating good and bad news.
10. We also found no significance in an analysis of the 25 individual transaction prices occurring after the foreign security price announcement.
11. This was necessary so that the size of the variances would not be driven by different price sizes.
12. In fact, we used a utility elicitation instrument to determine the general ex ante risk preferences of our subjects. They tended towards risk aversion, but did not always price the securities in the laboratory market as if they were risk averse.

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Book Reviews

Taxation in the European Community: The Small Business Perspective
by **Graham Bannock**. Paul Chapman, London, 1990, 130 pp, \$40.00.

Taxation in the European Community is a concise yet cogent study of the various tax systems within the European Community, particularly as they relate to small businesses. As such, it is a “must read” for those interested in EC taxation, and a “should read” for those interested in comparative taxation. It would be an strong supplemental text for a class on international taxation. Unlike most tax literature, the book is usable by non tax specialists because it is written in non-tax technical terms. Thus the book should prove a useful addition to most business libraries.

Its greatest value is that it thoroughly and thoughtfully describes the state of taxation, on the cusp of the much ballyhooed 1992 Market Integration Plan, within each of the states which comprise the EC. This alone makes the book interesting reading, for the differing economic impacts of various tax systems is of great concern to a wide variety of people. Furthermore, the 1992 Integration promises a unique opportunity to study these impacts. One reason why Integration has heightened interest in EC taxation is that the Community was unable to agree on the wholesale tax harmonization which originally was part of the Plan. A single market subject to substantially different taxes (unlike the United States where Federal taxes dominate differences among taxes imposed at the state level) should prove a robust laboratory in which to test the competing social policies which are manifested in tax laws. A prime example of competing policies is that some believe high taxes are desirable because they provide social overhead capital which stimulates beneficial economic activities and finances desirable social activities. Others favor low taxes. Effective EC tax harmonization may result if 1992’s reduction in market restrictions provides opportunities for tax arbitrage, thus limiting the ability of EC member states to use tax policy to effect such social goals.

A growing body of empirical research has shed light on the validity of the high-tax/low-tax theories. But such positive international tax research has been hindered by the limited availability and poor quality of cross-sectional data necessary to compare properly the differing impacts of various tax systems. A major barrier has been the need for researchers to understand fundamentally the operant tax systems of the countries under scrutiny. Because it details the key aspects of all major taxes imposed by each EC country, *Taxation in the European Community* helps meet this need and thus should prove an invaluable resource for comparative tax research.

Considering the author and the origins of the study, neither the utility of the book nor its small business perspective comes as a surprise. Graham Bannock has authored a host of articles and books over the past decade concerning the impact of various

European regulatory schemes (ranging from value-added taxes to social legislation) on small businesses. *Taxation in the European Community* itself arose from research commissioned by the European Small and Medium-Sized Enterprises Contact Group. (Bannock directed the study group and wrote the final report.)

As most tax materials, the book was somewhat obsolete before it was published. For example, post-1988 data were not included, and much of the data end in 1986. Nor were the possible impacts of the recent stunning political events in Eastern Europe discussed. This is not a major flaw, however, as the primary value of the book is its historical comparison of the OECD countries' various tax systems.

Reflecting its origins, *Taxation in the European Community* is really two books published in tandem. The first describes by the differences and similarities in the various taxes imposed the 15 members of the Organization for Economic Cooperation and Development, with attention to the special rules affecting small businesses. The second analyzes the effect of the 1992 harmonization of indirect taxes – primarily the value-added tax – on small European businesses.

The first book of the study is divided into three parts. Part one provides background information on business taxation in the EC. The study's usefulness in international tax research is well illustrated by the very first table. It compares changes over time in the tax intensity (that is, total tax revenues as a percentage of gross domestic product) of each of the 12 EC countries and three other countries: Japan, Switzerland, and the United States. (Together they comprise the 15 members of the OECD.) Other tables provide interesting comparative data which are difficult to find elsewhere, such as comparisons of changes in each EC country's tax structure (that is, the proportion of total tax revenues derived from each type of tax) over time.

The second part also should prove invaluable to those interested in comparative taxation, taxation in industrialized countries, or taxation in Western Europe. In this part, the key aspects of the tax systems of each OECD country are thoroughly compared on a tax-by-tax basis. First, taxes on personal wealth and income are compared. Included are income taxes imposed on individuals, social security taxes, personal wealth taxes, and estate and gift taxes. True to the goal of the underlying study, special treatment for small businesses is highlighted in this and the following sections.

Then taxes on corporate income are compared as well as value-added taxes. This section is easy to read and is replete with charts imparting a great deal of information effectively and efficiently. The comparison of local taxes which follows is especially handy. This kind of information tends to be difficult to glean from existing reference sources; only a study group made up of local practitioners, such as those who worked on this project, can do justice to local taxes.

The third part of the first book provides an excellent analysis of size neutrality in business taxation. It identifies an important feature common to most tax systems: compliance costs tend to be regressive. Although the book emphasizes economies of scale in tax data processing as the culprit, the discussion also includes a credible exposition of economies to scale in tax information costs, a factor which often has been overlooked in the extant literature.

The final part delineates the implications of size discrimination for tax policy. Echoing Adam Smith's admonition in *The Wealth of Nations* that simplicity is

desirable in any tax system, the case is made for radical tax reform targeted at simplifying all taxes imposed throughout the EC. But simplification is championed only as laws apply to small businesses. Thus the book supports a growing minority of commentators who criticize tax simplicity for its own sake. Instead they favor tax system relativity. These analysts believe that although simplicity should be an overall goal, complex tax law restrictions are necessary to prevent well-advised taxpayers from arbitraging away their tax liabilities with tax advantaged investments and organizational structures.

The second half of *Taxation in the European Community* focuses on indirect taxes (such as VAT and excise taxes), and thus is not of as widespread interest as the first half. Many will find it useful, however. It thoroughly describes the key characteristics of pre-1992 VAT and excise taxes. As such, it is a superb primer on indirect taxes, particularly for readers who are not experienced in the vagaries of VAT. More importantly, although taxes in general were not conformed as part of the 1992 Integration, indirect taxes were. The book does an excellent job of describing the resulting changes, as well as projecting their impact on small businesses and criticizing the problems which the new laws may cause.

Taxation in the European Community provides a wealth of information of EC taxes at a significant time in European business history. It describes both the pre-1992 and post-1991 laws, projects their impact on small businesses, and makes recommendations for radical reform necessary to reduce discrimination against small companies. Thus the book should prove of interest to those interested in either tax structure or tax policy. It is well worth the reading.

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1991 International Accounting Summaries: A Guide for Interpretation and Comparison *compiled by Coopers and Lybrand International, John Wiley & Sons, New York, 1991.*

Clearly a major change in this half century has been the significant increases in global trade and cross-border investments. Such trade and investment are now a much larger and increasing proportion of most economies, with consequential significant increases in international economic interdependence. Since at least the late 1940s, global levels of cross-border trade and foreign direct investment have continued to increase at rates faster than global gross national product (GNP). Consequently, increasingly larger numbers of companies in most countries, including those in developing and formerly socialist countries, are now exposed to global economic forces and must be competitive with companies in other countries. In addition, many more firms now engage in and manage international operations, with many such firms becoming highly integrated multinational corporations (MNCs). Such companies engaged in cross-border operations and others engaged in cross-border trade need to develop and understand foreign accounting data, especially since many of these companies use foreign accounting data to evaluate and control

their foreign operations. In addition, given agency and political costs, reported accounting data, including translation adjustments, are considered important by investors (Aggarwal, 1991).

Further, there has been considerable recent increase in cross-border portfolio investments (Beidleman, 1987). Individual and institutional investors in each of the major capital markets, such as those in the United States, Japan, and European countries, are increasing the proportion of their portfolios invested in foreign capital markets. Many debt and equity issues are now offered globally to investors in different countries simultaneously, and the number of securities that are traded in foreign countries and globally are increasing. As an example, over a thousand foreign stocks now trade in the United States as sponsored and unsponsored American Depository Receipts (ADRs). The market for cross-border interest rate and currency swaps has been one of the fastest-growing markets. There also has been considerable recent increases in cross-border direct investments and in cross-border mergers and acquisitions.

All of these cross-border portfolio and direct investors and multinational companies and other US firms engaged in international business along with their bankers and competitors need to understand the nature of foreign accounting data and must be able to assess foreign financial statements. For example, understanding of foreign financial data is critical to the assessment of counterparty creditworthiness and risk. However, foreign accounting data must generally be transformed and made comparable to domestic accounting data for it to be useful. In order to make such transformations, foreign accounting data must first be restated to conform to home country accounting standards. Only after that should it be translated into the home currency and language (Choi, 1985). Unfortunately, this first step in the transformation of international accounting data to make it more useful is the hardest and, perhaps, the least likely to be done correctly in practice. As in any process of interpretation or translation, knowledge of both the foreign and local bases of accounting data is required for the appropriate transformation and use of international accounting data (Schroeder et al., 1991) – hence the need for an international compilation of accounting practices and standards.

This book is such a compilation, and it consists of a foreword by senior executives of Johnson and Johnson noting the need for this book. The foreword is followed by a preface that illustrates the significance of international differences in accounting practices and the current inadequate state of efforts to harmonize such differences. After an introductory chapter, accounting standards for 24 countries and the international and European Community accounting standards are described and summarized, each with the same 32 dimensions or topics. The book ends with matrices (tables) comparing and summarizing national treatments of the 32 accounting measurement and reporting issues described in each of the country chapters.

The 32 topics covered in each chapter are divided into four categories. The first category – general information – consists of three topics: introduction, source of accounting standards, and audit and public company requirements. The second category – general accounting – consists of nine topics: financial statements, business combinations, foreign currency translation, inflation accounting, accounting changes, prior period adjustments, post balance sheet events, related party transactions, and

segmental information. The third category – accounting principles for specific items – the balance sheet – consists of ten topics: property plant and equipment, intangible assets, leases, investments, accounts receivable, inventories, current liabilities, long-term debt, contingencies, and capital and reserves. The fourth category – accounting principles for specific items – the income statement – consists of the last ten topics: revenue recognition, government grants, research and development, capitalized interest costs, imputed interest, extraordinary items, income taxes, pensions, discontinued operations, and earnings per share.

Unfortunately, this book does not provide the reasons or bases which were used to select the 24 countries included or for selecting the 32 accounting topics summarized for each country. For example, in its choice of countries, while Denmark and Sweden are included, Norway is not, and while Korea, Singapore, and Hong Kong are included, Taiwan, Malaysia, or other Asian countries are not. Indeed, no developing country from South or Central America, South Asia, the Middle East, or Africa other than Nigeria is included. Similarly, accounting standards or practices for hedging transactions, for countertrade and barter transactions, or for various unfunded liabilities are not discussed. A brief discussion of the guidelines used in selecting and organizing the contents of this book would have been most useful. In addition, a chapter or two covering theoretical and conceptual frameworks useful in assessing the reasons for the differences among the various national accounting practices presented would have greatly improved this book. Finally, this compilation would have benefited from additional details regarding the extent to which each of the accounting principles discussed are actually practiced in each of the countries covered.

As may be expected for a compilation such as this, none of the topics or issues covered is discussed in detail. It should be noted that this guide is just one of many sources for international accounting principles. While not directly comparable, most of the larger international accounting firms, including Price Waterhouse, Arthur Andersen, KPMG Peat Marwick, Ernst and Young, and Deloitte and Touche, also publish reviews and summaries of accounting principles and practices in various countries. Nevertheless, this book is a unique and good introduction to the nature of a number of areas of accounting practice in a number of countries. Thus, it should prove to be a useful guide to the interpretation and use of foreign accounting data. I am pleased to recommend it as an addition to any practical library on international accounting.

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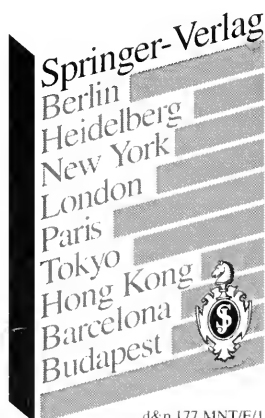
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